COLLINS

instruction book

Collins Radio Company

180R-6/6A Antenna Coupler and 309A-2E Antenna Coupler Control

Guarantee

The equipment described herein is sold under the following guarantee:

Collins agrees to repair or replace, without charge, any equipment, parts, or accessories which are defective as to design, workmanship or material, and which are returned to Collins at its factory, transportation prepaid, provided:

(a) Notice of the claimed defect is given Collins within one (1) year from date of delivery and goods are returned in accordance with Collins instructions.

(b) Equipment, accessories, tubes, and batteries not manufactured by Collins or from Collins designs are subject to only such adjustments as Collins may obtain from the supplier thereof.

(c) Failure of the equipment to operate in a normal and proper manner due to exposure to any environmental condition in excess of those published in the equipment specification shall not be deemed a defect within the meaning of this clause.

Collins further guarantees that any radio transmitter described herein will deliver full radio frequency power output at the antenna lead when connected to a suitable load, but such guarantee shall not be construed as a guarantee of any definite coverage or range of said apparatus.

The guarantee of these paragraphs is void if equipment is altered or repaired by others than Collins or its authorized service center.

No other warranties, expressed or implied, shall be applicable to any equipment sold hereunder, and the foregoing shall constitute the Buyer's sole right and remedy under the agreements in this paragraph contained. In no event shall Collins have any liability for consequential damages, or for loss, damage or expense directly or indirectly arising from the use of the products, or any inability to use them either separately or in combination with other equipment or materials, or from any other cause.

How to Return Material or Equipment

If, for any reason, you should wish to return material or equipment, whether under the guarantee or otherwise, you should notify us, giving full particulars including the details listed below, insofar as applicable. If the item is thought to be defective, such notice must give full information as to nature of defect and identification (including part number if possible) of part considered defective. (With respect to tubes we suggest that your adjustments can be speeded up if you give notice of defect directly to the tube manufacturer.) Upon receipt of such notice, Collins will promptly advise you respecting the return. Failure to secure our advice prior to the forwarding of the goods or failure to provide full particulars may cause unnecessary delay in the handling of your returned merchandise.

ADDRESS:

Collins Radio Company
Product Support Division
Cedar Rapids, Iowa

INFORMATION NEEDED:

(A) Type number, name and serial number of equipment
(B) Date of delivery of equipment
(C) Date placed in service
(D) Number of hours of service
(E) Nature of trouble
(F) Cause of trouble if known
(G) Part number (9 or 10 digit number) and name of part thought to be causing trouble
(H) Item or symbol number of same obtained from parts list or schematic
(I) Collins number (and name) of unit subassemblies involved in trouble
(J) Remarks

How to Order Replacement Parts

When ordering replacement parts, you should direct your order as indicated below and furnish the following information insofar as applicable. To enable us to give you better replacement service, please be sure to give us complete information.

ADDRESS:

Collins Radio Company
Product Support Division
Cedar Rapids, Iowa

INFORMATION NEEDED:

(A) Quantity required
(B) Collins part number (9 or 10 digit number) and description
(C) Item or symbol number obtained from parts list or schematic
(D) Collins type number, name and serial number of principal equipment
(E) Unit subassembly number (where applicable)

523-0133000-006211
6th Edition, 15 November 1967

COLLINS

instruction book

for AN/ARC-58 (or others-?)

180R-6/6A Antenna Coupler and 309A-2E Antenna Coupler Control

Printed in the United States of America

MFG-SOURCE-CODES

Collins Radio Company | Cedar Rapids, Iowa

List of Effective Pages

*The asterisk indicates pages changes, added, or deleted by the current change.

Page No.	Issue
Cover	Original
Title	Original
A	Original
Rec of Rev	Original
i thru v	Original
vi Blank	Original
vii	Original
1-0 thru 1-4	Original
2-1 thru 2-4	Original
3-1 thru 3-17	Original
3-18 Blank	Original
4-1 thru 4-43	Original
4-44 Blank	Original
5-1 thru 5-33	Original
5-34 Blank	Original
5-35 thru 5-104	Original
6-1	Original
6-2 Blank	Original
6-3	Original
6-4 Blank	Original
6-5	Original
6-6 Blank	Original
6-7	Original
6-8 Blank	Original
6-9	Original
6-10 Blank	Original
6-11	Original
6-12 Blank	Original
6-13	Original
6-14 Blank	Original
6-15	Original
6-16 Blank	Original
6-17	Original
6-18 Blank	Original
6-19	Original
6-20 Blank	Original
6-21	Original
6-22 Blank	Original
6-23	Original
6-24 Blank	Original
6-25	Original
6-26 Blank	Original
6-27	Original
6-28 Blank	Original
6-29	Original
6-30 Blank	Original
6-31	Original
6-32 Blank	Original
6-33	Original
6-34 Blank	Original
6-35	Original
6-36 Blank	Original

Record of Revisions

180R-6/6A Antenna Coupler and 309A-2E Antenna Coupler Control	LOCATION
ASSIGNED TO (JOB TITLE)	

REV. NO.	REVISION DATE	INSERTION DATE	BY	REV. NO.	REVISION DATE	INSERTION DATE	BY

RETAIN THIS RECORD IN THE FRONT OF MANUAL OR CHAPTER.
ON RECEIPT OF REVISIONS, INSERT REVISED PAGES IN THE MANUAL, AND ENTER DATE INSERTED AND INITIALS.

table of contents

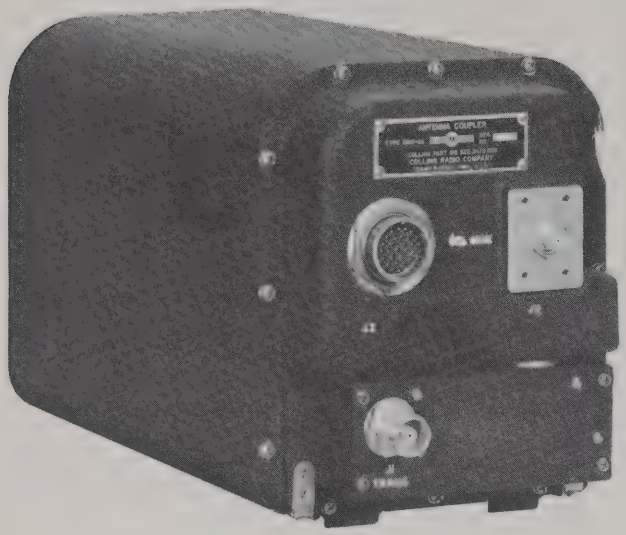
table of contents (cont)

list of illustrations

list of illustrations (cont)

list of illustrations (cont)

list of tables



180R-6A ANTENNA COUPLER

309A-2E ANTENNA COUPLER CONTROL

180R-6 ANTENNA COUPLER

C755-21-P

Figure 1-1. 180R-6/6A Antenna Coupler and 309A-2E Antenna Coupler Control.

section 1
general description

1.1 GENERAL

This instruction book provides information to aid in the installation, operation, and maintenance of the 180R-6/6A Antenna Coupler and the 309A-2E Antenna Coupler Control (figure 1-1). It includes a description of the equipment, list of associated publications (table 1-1), installation procedures, list of equipment supplied (table 1-2) theory of operation, maintenance procedures, parts list, and schematic diagrams.

Table 1-1. Associated Publications.

PUBLICATION	COLLINS PART NUMBER
Universal Radio Group 65F-1 Instruction Book	523-0756326
548L-4A Linear Power Amplifier Instruction Book	523-0756361
878L-1 Amplifier Test Set Instruction Book	523-0755895
878L-2 Relay Control Test Set Instruction Book	523-0755959
878L-3 Discriminator Test Set Instruction Book	523-0756296

Table 1-2. Equipment Supplied.

COMPONENT	QTY	WEIGHT (lb)	OVERALL DIMENSIONS (inches)			COLLINS PART NUMBER
			H	W	L	
180R-6 Antenna Coupler	1	21.5	9-1/2	7	17-3/4	522-0998-005
or						
180R-6 Antenna Coupler with Lightning Arrester	1	24.5	9-1/2	7	22-5/8	522-0998-035
180R-6A Antenna Coupler	1	19.5	9-1/2	7	17-3/4	522-2473-005
309A-2E Antenna Coupler Control	1	11.75	9-5/16	3-11/16	16-27/32	522-2474-004

1.2 DESCRIPTION OF MAJOR UNITS

1.2.1 180R-6/6A Antenna Coupler

The 180R-6/6A Antenna Coupler contains tuning and phasing elements with associated drive motors to match a 50-ohm antenna or antenna feed system impedance to its associated transmitter impedance. The 180R-6/6A Antenna Coupler also contains an antenna transfer relay to permit both transmit and receive operation from a common antenna. The 180R-6/6A functions over a frequency range of 2.0 to 29.999 MHz. Except for those elements necessary to sense and correct mismatch, the remaining control circuits are contained in the 309A-2E Antenna Coupler Control, which may be located in a more accessible position for ease of maintenance and repair.

The 180R-6 and 180R-6A Antenna Couplers are identical except that the 180R-6A has a protective circuit to prevent the associated transmitter from being keyed when no antenna is connected. Therefore, the 180R-6 is used mainly with directly coupled long-wire or whip antennas while the 180R-6A is used mainly with remotely connected antennas or antenna feed systems.

1.2.2 309A-2E Antenna Coupler Control

The 309A-2E Antenna Coupler Control (figure 1-2) consists of six plug-in subassemblies. Three of these subassemblies (the relay assembly and two 5-watt dc servo amplifiers) assist

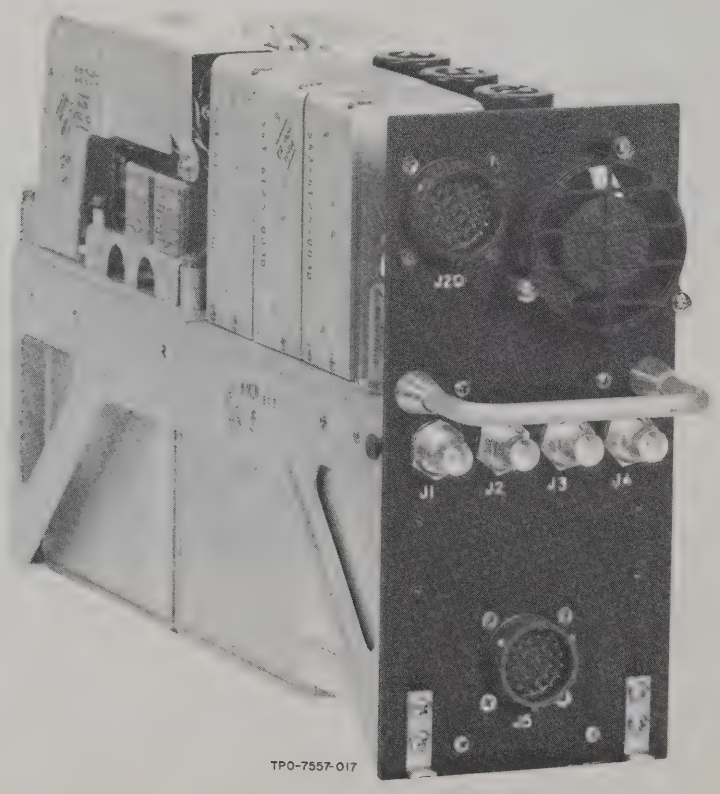


Figure 1-2. 309A-2E Antenna Coupler Control With Dust Cover Removed.

the 180R-6/6A in tuning and loading the antenna. Three 156G-1 Receiver Coupler subassemblies couple the antenna to three receivers. The receiver coupler subassemblies are optional equipment.

1.2.3 Optional and Required Equipment

Table 1-3 lists the optional equipment, and table 1-4 lists the equipment required but not supplied.

Table 1-3. Optional Equipment.

COMPONENT	QUANTITY	COLLINS PART NUMBER
349G-3 Shockmount (for antenna coupler)	1	522-0999-002
349N-1 Mount (for antenna coupler control)	1	522-1076-004
156G-1 Receiver Coupler	3	522-1002-004

Table 1-4. Equipment Required but not Supplied.

ITEM	QUANTITY PER EQUIPMENT	DESCRIPTION
Linear power amplifier	1	548L-4A Linear Power Amplifier
Receiver	1	651F-1 Receiver
Power source	1	115 volts ±10% 380-400 Hz, single-phase
Power source	1	28-volt dc at approximately 1/2 ampere

1.3 GENERAL EQUIPMENT CHARACTERISTICS

Specifications for the 180R-6/6A Antenna Coupler and the 309A-2E Antenna Coupler Control are listed below.

Frequency range ..... 2.0 to 29.999 MHz.

Ambient temperature ..... -55 to +71 °C (-67 to +160 °F).

Ac power source ..... 115 volts ±10% 380-400 Hz, single-phase, 2.5 amperes maximum.

the hole provided in the mounting and tie it securely. Be certain that no slack remains in the wire. Placing the wire on the right side of the threaded shaft will tend to tighten the knurled nut during subsequent vibration.

2.3.3 Location and Mounting of 180R-6/6A Antenna Coupler

The 180R-6/6A should be located as near as possible to the antenna feedthrough insulator to obtain maximum radiating efficiency from the antenna and to reduce the hazard to personnel due to exposed high rf voltages. The 180R-6/6A has no operating controls and need not be accessible during operation, but it must be well ventilated and accessible for adjustment, inspection, and unit replacement.

Figure 2-2 shows the outline and mounting dimensions of the 180R-6/6A Antenna Coupler. The 349G-3 Shockmount should be mounted with number 6 mounting screws, nuts, and washers. Use all ground straps provided with the equipment to ensure good electrical ground. Mounting brackets must be free of paint at points which attach to shockmounts to ensure good electrical connections.

If the antenna tuning system is to operate under conditions of shock or vibration, the following installation procedure should be used.

a. Place the 180R-6/6A on the 349G-3 so that the front end is about a foot in front of the mounting.
b. Use reasonable pressure to push the 180R-6/6A to the rear of the mounting until the guide pins on the mounting engage the guide pin holes in the case.
c. In some cases, it may be necessary to lift the front of the 180R-6/6A about 1 inch above the mounting and apply backward pressure.
d. When the 180R-6/6A is seated properly on the 349G-3, place the locking clamps in the proper positions and tighten the knurled nuts to secure the 180R-6/6A in place. After the nuts are drawn tight, slight jarring of the 180R-6/6A may permit further tightening of the knurled nuts.
e. To prevent loosening of the knurled nuts by vibration, pass a wire through the hole provided in the nut, and adjust the wire ends so that they are equal length. Twist the wire ends loosely together and run them along the right side of the threaded shaft. Pass the wire through the hole provided in the mounting and tie it securely. Be certain that no slack remains in the wire. Placing the wire on the right side of the threaded shaft will tend to tighten the knurled nut during subsequent vibration.

2.4 INTERCONNECTION OF UNITS

Location of the antenna tuning system must be determined by the purchaser because space allocation differs with each installation. Therefore, the interconnection cable must be fabricated from bulk supplies. The physical layout of the cable must be determined by the installer for each installation. Recommended wire size is number 22 AWG unless otherwise specified. Number 20 AWG shall be minimum wire size used for the ac power lines, and total resistance to and from the power supply shall not exceed 0.15 ohm. Number 18 AWG shall be the minimum wire size used for the dc power supply lines, and the total resistance to and from the power supply shall not exceed 0.10 ohm.

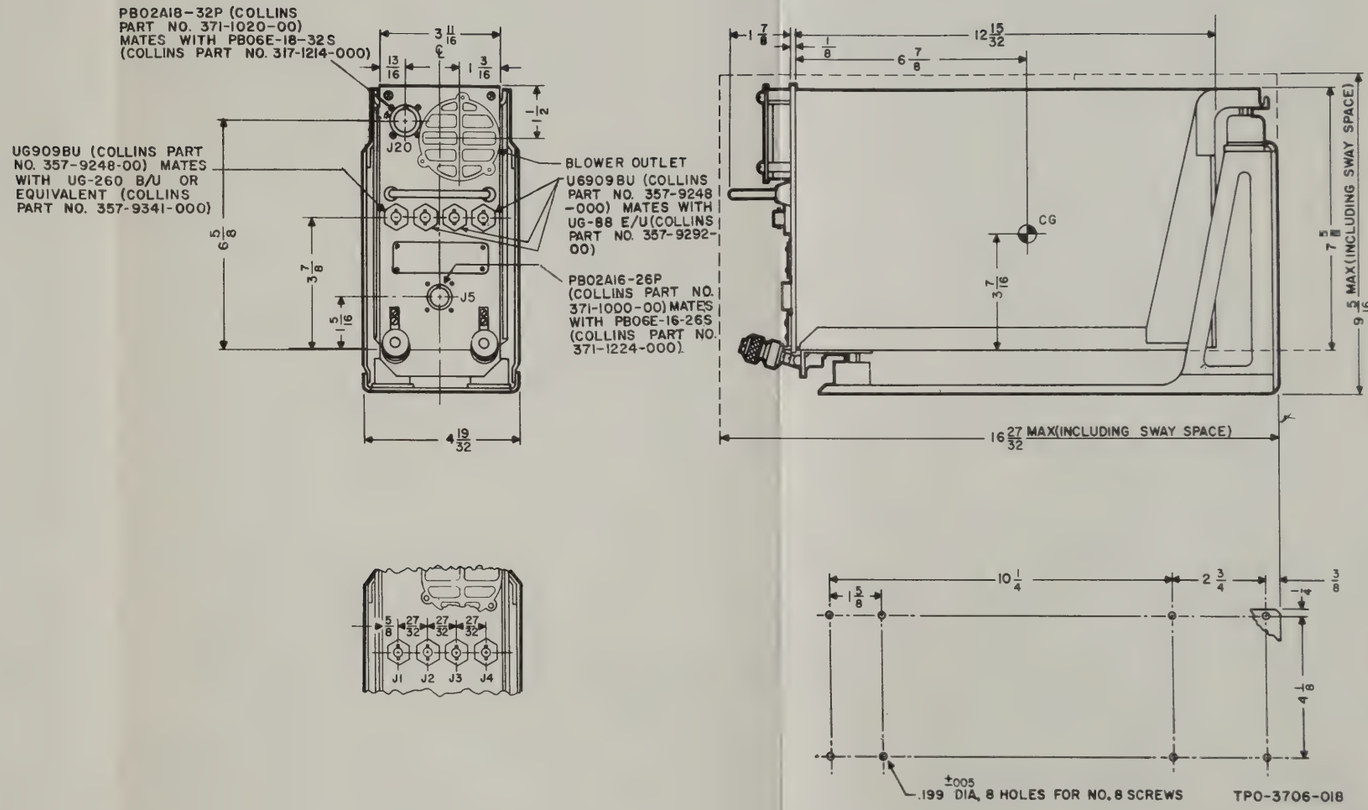
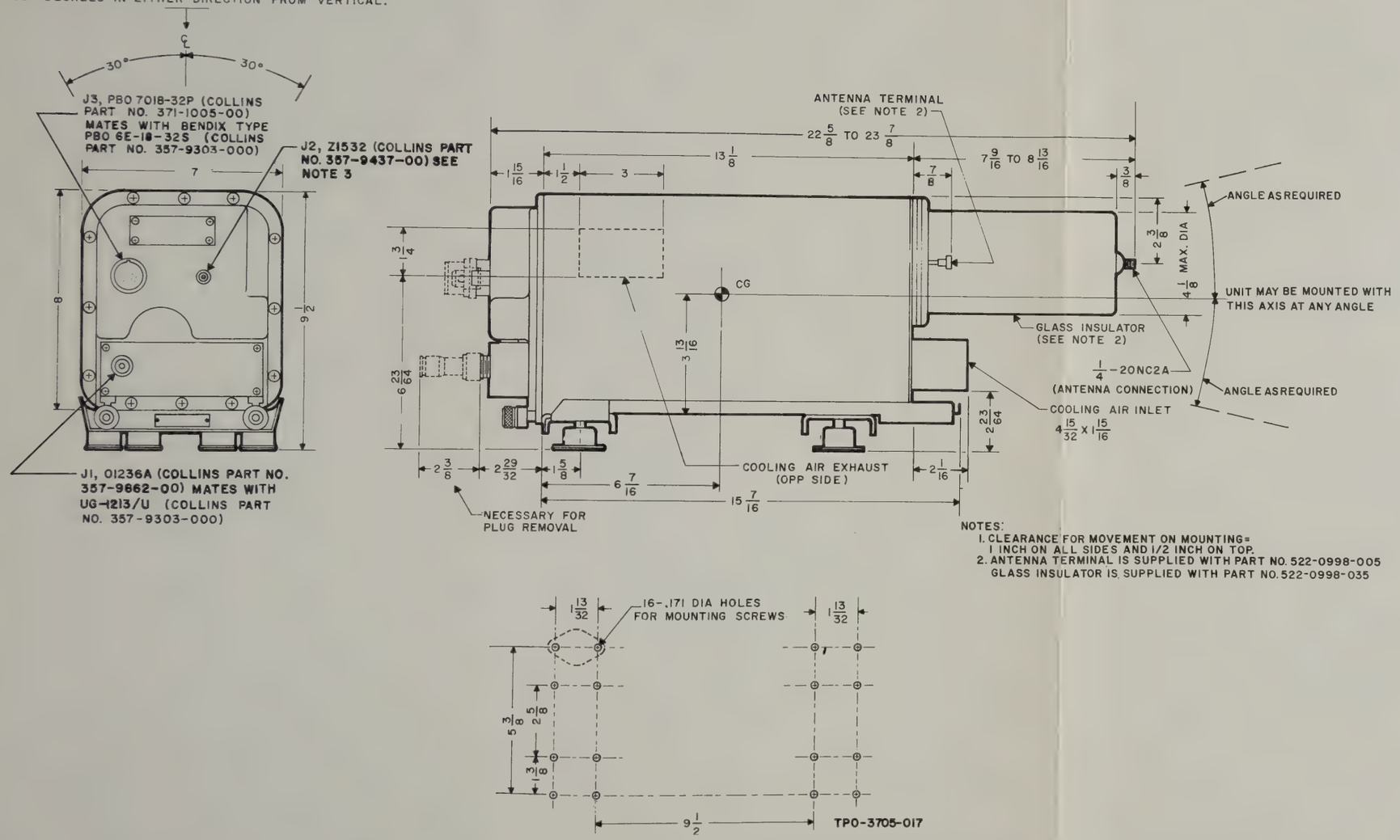
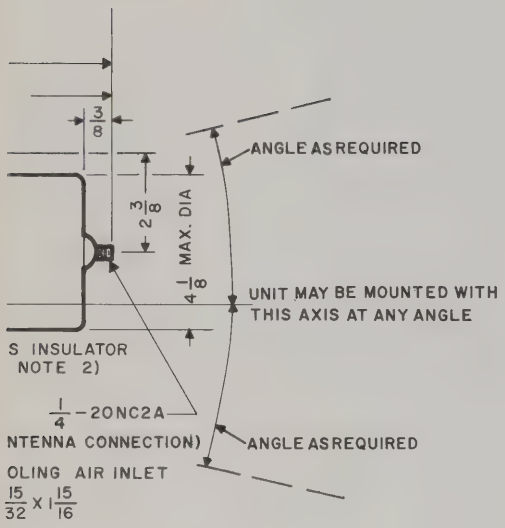


Figure 2-1. 309A-2E Antenna Coupler Control, Outline and Mounting Dimensions.



NOTES:
1. CLEARANCE FOR MOVEMENT ON MOUNTING= 1 INCH ON ALL SIDES AND 1/2 INCH ON TOP.
2. ANTENNA TERMINAL IS SUPPLIED WITH PART NO. 522-0998-005 GLASS INSULATOR IS SUPPLIED WITH PART NO. 522-0998-035

Figure 2-2. 180R-6/6A Antenna Coupler, Outline and Mounting Dimensions.



FOR MOVEMENT ON MOUNTING=
LL SIDES AND 1/2 INCH ON TOP.
ERMINAL IS SUPPLIED WITH PART NO. 522-0998-005
LATOR IS SUPPLIED WITH PART NO. 522-0998-035

section 3
principles of operation

3.1 GENERAL

The combination of the 180R-6/6A Antenna Coupler and the 309A-2E Antenna Coupler Control contains all the components required to automatically match an antenna or an antenna feed system to a 50-ohm line over the frequency range of 2.0 to 29.999 MHz. Figure 3-1 shows signal paths in the two units.

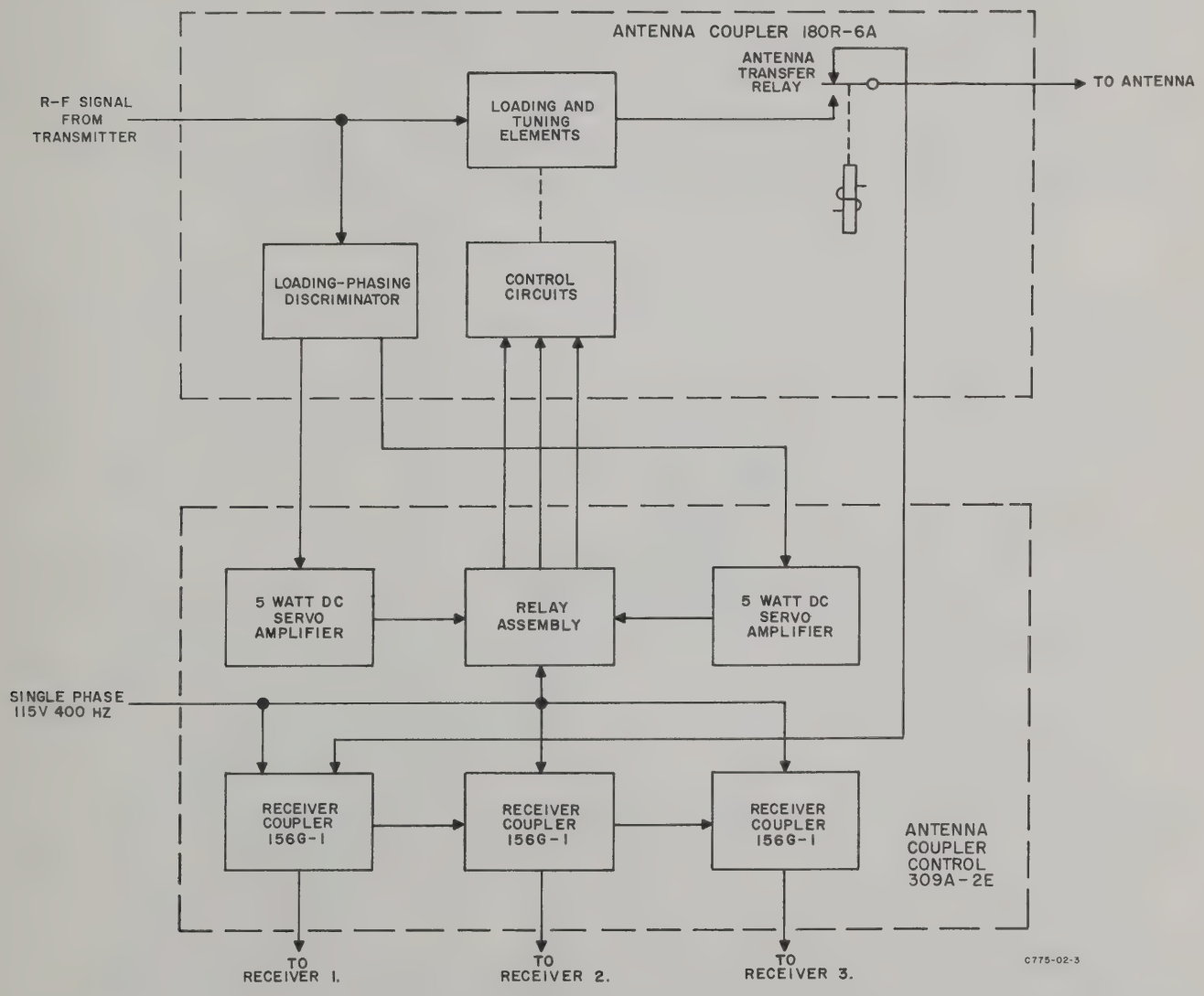


Figure 3-1. 180R-6/6A Antenna Coupler and 309A-2E Antenna Coupler Control, Block Diagram.

The two active tuning elements of the 180R-6/6A are variable vacuum capacitor C1, that may be switched to operate in series or shunt, and tapped coil L1. Coil L1 is a silver ribbon that is wound from a grounded metal cylinder onto a ceramic cylinder where a sliding tap divides the inductance into shunt and series portions. The rf input is fed into the sliding tap. The inductance between the sliding tap and the antenna transmission line is in series with the antenna. The inductance between the sliding tap and the metal drum is in shunt with the antenna transmission line. This provides a wide range of inductance without self-resonance. The inactive portion of the coil is removed from the rf field by storage on the metal grounding drum.

Separate servo motors drive the coil and the coil tap. When the transmitter is keyed, a low rf signal is supplied to the 180R-6/6A phasing and loading discriminators to detect impedance mismatch. The discriminators produce error signals that are fed to servo amplifiers in the 309A-2E. The servos drive the tuning motors geared to the tap and coil tuning elements in the 180R-6/6A. When the tuning and loading elements have resonated the antenna reactance and have produced the proper loading of the transmitter, the tuning motors stop. The rf output is applied through the 180R-6/6A antenna transfer relay to the antenna. Releasing the transmitter key deenergizes the transfer relay, allowing rf signals to be received.

The 309A-2E controls the 180R-6/6A during tuning and loading operations. Figure 3-2 is a graphic illustration of the sequence of operation. The 309A-2E operation is a 5-step sequence: homing, coupler hold, rf on, tune, and operate, plus a fault position.

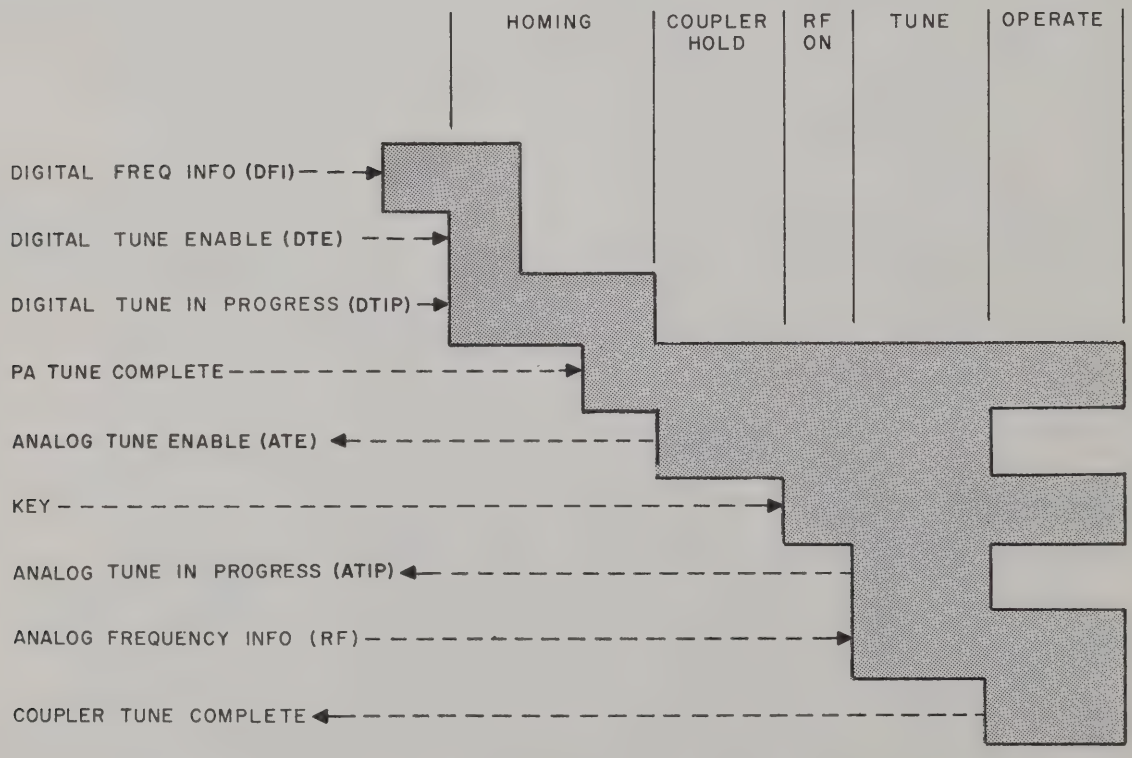


Figure 3-2. Switch Sequencing Flow Chart.

When a new operating frequency is selected, the 309A-2E sends +28 volts dc and ground information to the 180R-6/6A, driving the tuning and loading elements to home positions. The completion of homing advances the 309A-2E to the coupler hold position. When the operator depresses the push-to-talk button on the microphone, a ground is supplied on the keying control line advancing the 309A-2E to the rf on position. In this position, the 309A-2E controls the transmit-receive system, causing the transmitter to supply the 180R-6/6A with a low-power rf signal. Application of rf to the 180R-6/6A advances the 309A-2E to the tune position and initiates discriminator action in the loading-phasing discriminator of the 180R-6/6A. The discriminators assume control of tuning and loading by detecting phasing or loading errors from the input transmission line. Detailed discussion of the discriminators is given in paragraph 3.6.

3.2 SWITCHING SEQUENCE

3.2.1 General

This discussion covers the tuning sequence for the entire tuning operation.

Note

Simplified schematic diagrams used with this text are for clarity during discussion; for trouble analysis it is recommended that the main schematic diagrams be used.

3.2.2 Relay Control Unit

The relay control unit in the 309A-2E controls the sequence of operation of the antenna tuning system. The sequence control switches are 12-position rotary switches. Six of these positions are stopping points in the tuning cycle. The sequence switches are driven by common motor B1. Motor B1 is actuated by a ground on K1-7 and stops when the ground is removed. The short circuit across the motor armature through K1-2 and -4 provides dynamic braking and prevents coasting when K1 is deenergized. The motor actuating circuit is shown in figure 3-3.

The discriminator outputs are fed to servo amplifiers in the 309A-2E. The servos supply ac voltages that are proportional to the discriminator errors to the coil and tap motors. They drive the coil and the coil tap until the discriminators detect no further error. When the error has been resolved, the antenna has been resonated for the selected frequency, and the load has been adjusted to 50 ohms. This matches the output of the transmit-receive system.

At the completion of tuning and loading operations, the 309A-2E advances to the operate position. It remains in operate during transmitter operation.

The fault position is activated only if the 180R-6/6A fails to complete tuning and loading within approximately 2 minutes. If the 309A-2E advances to the fault position, the transmitter must be rechanneled and the tuning sequence repeated.

3.2.3 Home Position

A simplified schematic diagram of the homing circuits is shown in figure 3-3. All switches are shown in the home position. When the transmitter is rechanneled, a momentary ground is applied to the digital tune in progress (DTIP) line that energizes relay K9. The ground on S5-9 is applied to the DTIP line through S5-2 and K9-2 and -3, holding K9 energized until the end of the homing cycle. Diode CR3 prevents the ground on S5-9 from appearing at K1-7.

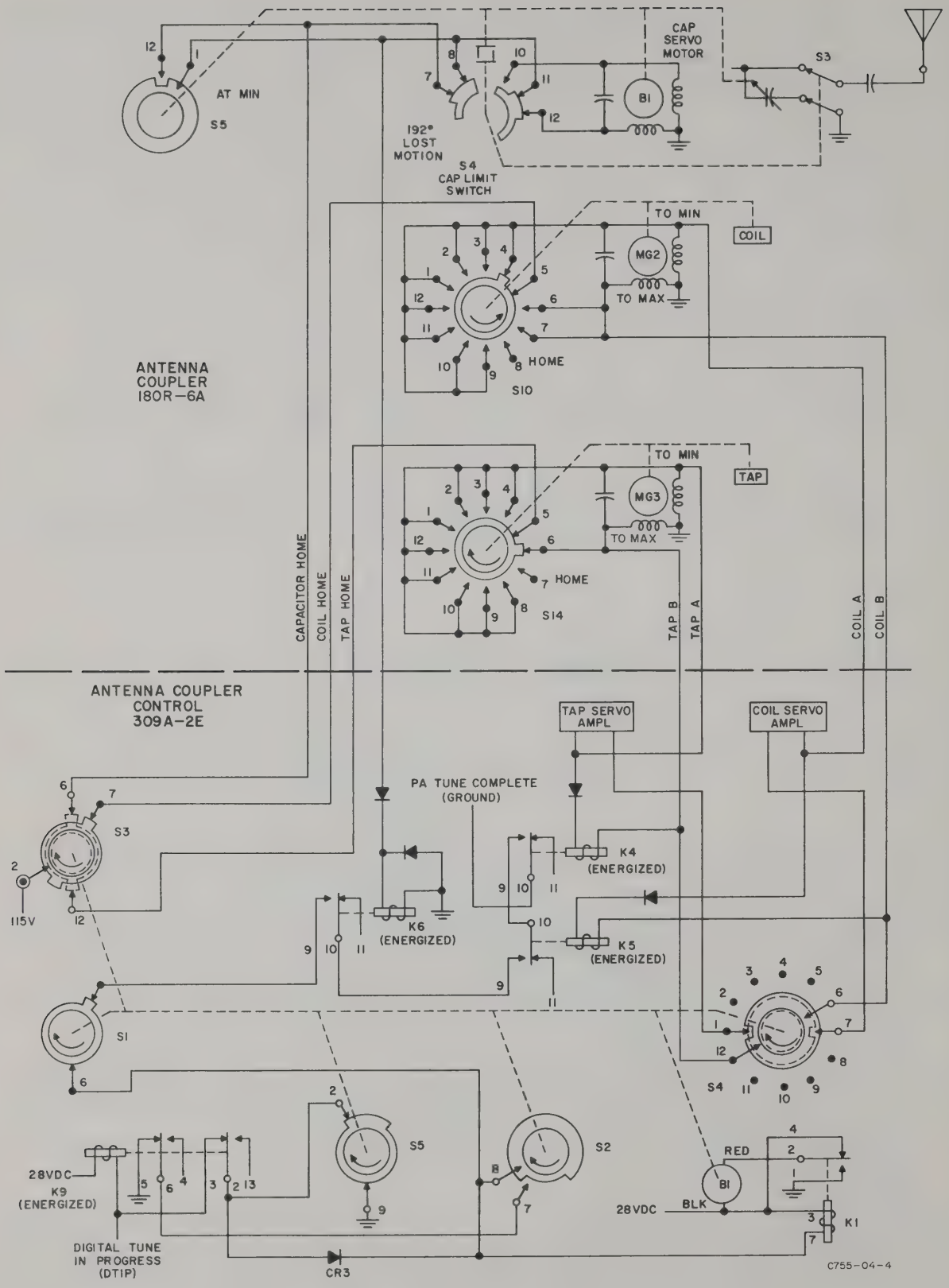


Figure 3-3. Homing Circuits, Simplified Schematic Diagram.

With K9 energized, the ground on K9-5 will be applied through S2-7 and -8 to K1-7, energizing K1. When K1 is energized, switch motor B1 will drive the switches to home position.

In the home position switch S3 applies 115 volts ac to the tap, coil, and capacitor motors in the 180R-6/6A. Tap relay K4, coil relay K5, and capacitor motor relay K6 are in parallel with their respective motors and will be energized at this time. Switch S4 opens a lead to the output circuits of both servo amplifiers to prevent loading of servo motors MG2 and MG3 during their homing cycle.

The 115 volts ac on S3-7 is applied through the contacts of S10 to servo motor MG2. MG2 drives S10 and tuning coil L1 to the home position. In the home position, L1 is at minimum and S10 is at contact 8, removing the ac power. When L1 is at minimum, only four to six turns of the coil remain on the ceramic cylinder, and the remaining turns are stored on the metal grounding drum.

The 115 volts ac on S3-12 is applied through the contacts of S14 to servo motor MG3. MG3 drives S14 and the sliding tap to the home position. In the home position, the sliding tap is in the center of the coil turns remaining on the ceramic cylinder and S14 is at contact 7, removing ac power.

The 115 volts ac on S3-6 is applied through contacts on S4 to capacitor servo motor B1. B1 drives the capacitor to home position. Home position for the capacitor is in parallel with the antenna and at minimum capacitance. B1 is driven directly by 115 volts ac. Figure 3-4 shows the path by which 115 volts ac is supplied.

Switch S4 is a cam-operated, 192°, lost-motion switch; 192° is the distance of travel from maximum to minimum, or the reverse, by capacitor C1. At both maximum and minimum S4 will switch, and if 115 volts is present, B1 will reverse direction. At maximum capacitance S3 will switch the capacity from in parallel to in series with the antenna, and B1 will drive C1 toward minimum until one of the 115-volt circuits is broken. The loading and phasing discriminators determine which of these circuits is open and which is closed.

When S14, S10, and S4 are in the home position, relays K4, K5, and K6 deenergize and the ground on the PA tune complete line will be applied through S1-1 and -6 to K1-7, stepping the 309A-2E to the coupler hold position.

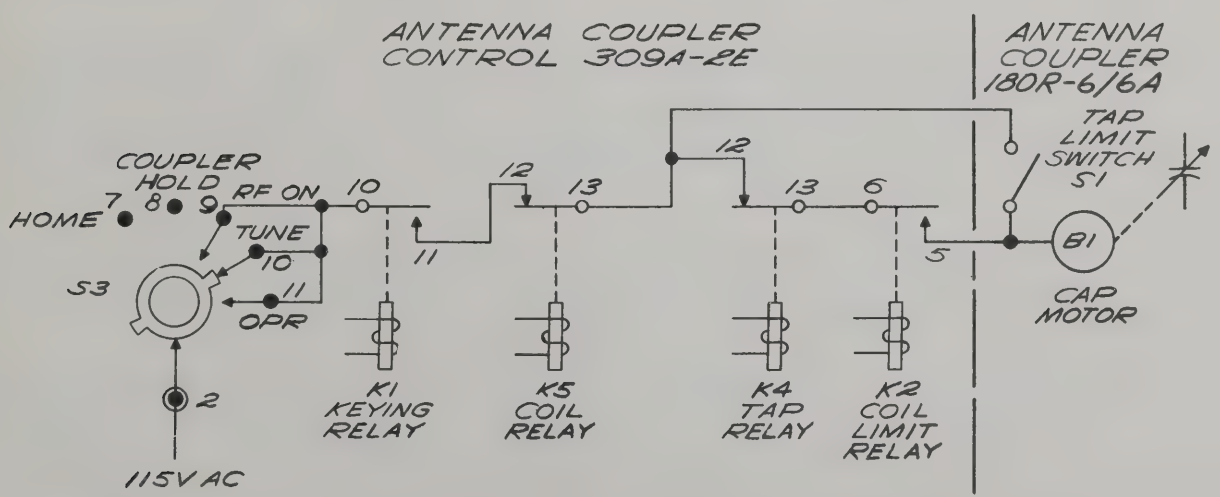


Figure 3-4. Control of Capacitor Motor, Simplified Schematic Diagram.

3.2.4 Coupler Hold Position

Figure 3-5 is a simplified schematic diagram of the coupler hold circuits. As the switches in the 309A-2E rotate from the home to the coupler hold position, a ground is placed on the analog tune enable line (ATE) through S5-5 and -9, and the ground is removed from the DTIP line. This deenergizes K9 and connects the key control line to K1-7 through K9-14 and -8 and S1-2 and -6. When the transmitter is keyed, a ground is placed on the key control line energizing K1 and stepping the 309A-2E to the rf on position.

The tune advance line is normally strapped to the key control line; it may, as an option, be grounded. In this case the 309A-2E will step from the home to the rf on position without stopping in the coupler hold position.

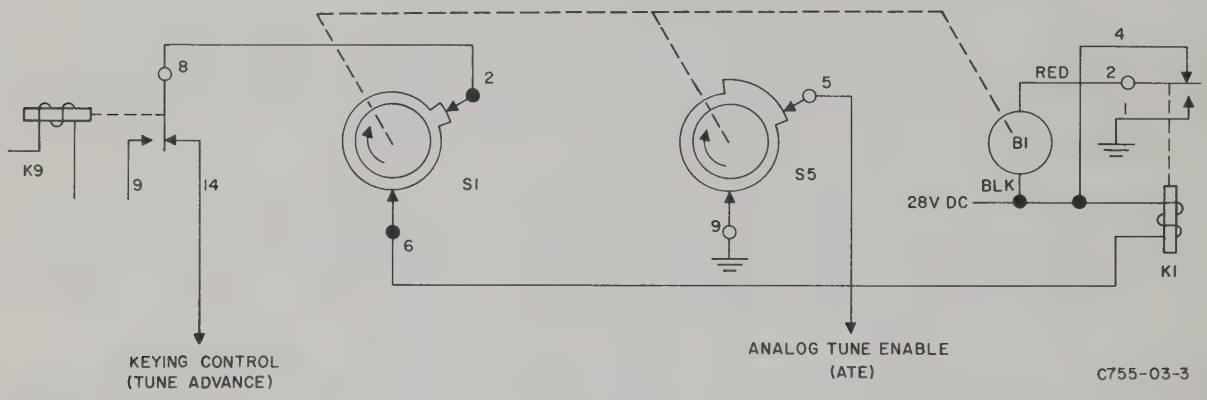


Figure 3-5. Coupler Hold Circuit, Simplified Schematic Diagram.

3.2.5 RF On Position

Figure 3-6 is simplified schematic diagram of the rf on position. A ground on the key control line energizes keying relay 2K1. With 2K1 energized, 115 volts ac is applied through 2K1-10 and -11 to both servo amplifiers, and through 2K1-13 and -14 to the rate generators and blower motor in the 180R-6/6A. Twenty-eight volts dc is applied through 2K1-3 and -5 to energize antenna transfer relay K1.

The transmitter cannot be keyed unless the transmitter key interlock line is grounded. In the 180R-6 this ground is furnished through contacts of antenna transfer relay K1 (figure 6-1). In the 180R-6A this ground must be furnished through contacts of antenna transfer relay K1 (figure 6-2) from the antenna or antenna feed system; this prevents keying the transmitter with no antenna connected.

A ground is held on the analog tune enable (ATE) line through S5-5 and -9, and 115 volts ac is supplied through S3-2 and -3 to time delay relay K3. K3 will step the system to fault position if tuning is not complete within 2 minutes.

At some frequency within the tuning range of the system, the correct positioning of the tuning elements in the 180R-6/6A may be at, or very close to, the home position. If this condition exists, the error signals from the loading and phasing discriminators will be so low in amplitude that the servo-amplifier outputs will not be sufficient to energize the associated servo motors and relays. To produce the required error signal, a ground is applied through S5-9

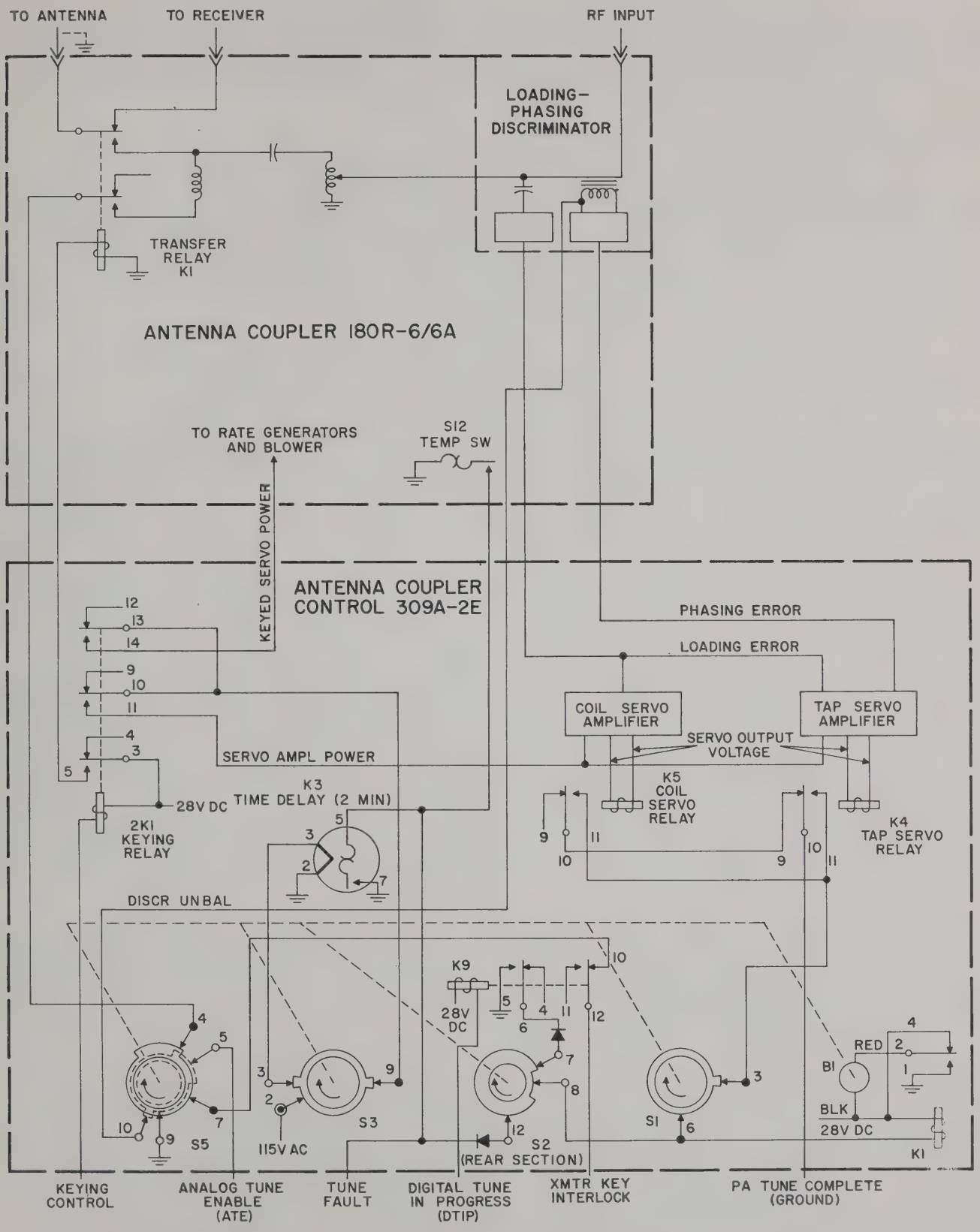


Figure 3-6. RF On Position, Simplified Schematic Diagram.

and -10 to the discriminator unbalance line. This will cause one of the servo motors to energize, and a ground from the PA tune complete line will be furnished to relay K1 through S1-6 and -3 and contacts 10 and 11 of energized relay K4 or K5. K1 is thus energized and the 309A-2E steps to the tune position.

3.2.6 Tune Position

In the tune position, 115 volts ac is applied to both servo amplifiers and their associated relays through S3-2 and -10 (figure 3-7). The 115 volts is applied to the heater of time delay relay K3 through S3-2 and -4. S5-5 and -9 keep the ground on the ATE line. The ground on the key control line holds the antenna transfer relay energized, furnishing the necessary ground to the transmitter key interlock line. A ground is applied to the analog tune in progress (ATIP) line through S2-4 and -11.

The maximum tunable inductance of L1 is determined by latching relays K10 and K11. Operation of these relays is described in paragraph 3.2.6.1.

Positioning of the tuning elements is determined by the loading and phasing discriminators. The loading discriminator senses if the impedance appears as 50 ohms, more than 50 ohms, or less than 50 ohms. A null in the output voltage of the discriminator indicates the 50-ohm point. The phasing discriminator senses if the impedance appears capacitive, inductive, or resistive. The phasing discriminator null occurs when the impedance appears resistive.

The amplified error voltages drive the servo motors until both discriminators reach a null; at this point the tap will be at a 50-ohm point and the impedance will appear resistive. If both the discriminators sense a null before the tap or coil reaches its limit switch, capacitor C1 will remain in its home position. If, however, the coil reaches its limit switch, the capacitor motor will drive the capacitor toward maximum. Changing the capacitance unbalances the phasing discriminator, causing the coil motor to run again. This will energize K5 and stop the capacitor motor. When the discriminator senses a null, the coil will stop. If the tap reaches its limit switch without finding a null, the capacitor motor will again drive the capacitor. The unbalance will cause the loading discriminator to run the tap away from its limit switch, and energize K4. Energizing K4 will stop the capacitor motor and the tap will run until the null is reached. If the capacitor reaches maximum before the tap and coil reach a null, S3 will switch the capacitor in series with the antenna and the described action will repeat until both discriminators sense a null point; at this time, the tuning process is complete.

Upon completion of tuning, the coil, tap, and capacitor relays (K4, K5, and K6) will deenergize and supply a ground to the heater of time delay relay K8 through S1-4R and -5. K8 closes after 3 seconds and applies a ground to switch motor relay K1 through S1-4R and -6, stepping the 309A-2E to the operate position.

3.2.6.1 Latching Relays

The maximum inductance that can be placed into the circuit by tuning coil L1 is controlled by coil limit switch S7. S7 receives digital frequency information (DFI) from latching relays K10 and K11. In the homing cycle, a ground from the transmitter was placed on one or more of the five band information lines; 10-MHz A, C, D, E, or 1-MHz E. Figures 3-8 through 3-11 show the four possible latching relay circuit configurations. The latching relays are set up by band information, the DFI ground, and the +28 volts dc from the DTE line. The relays furnish a ground to the proper contact on S7, limiting the tunable inductance of L1.

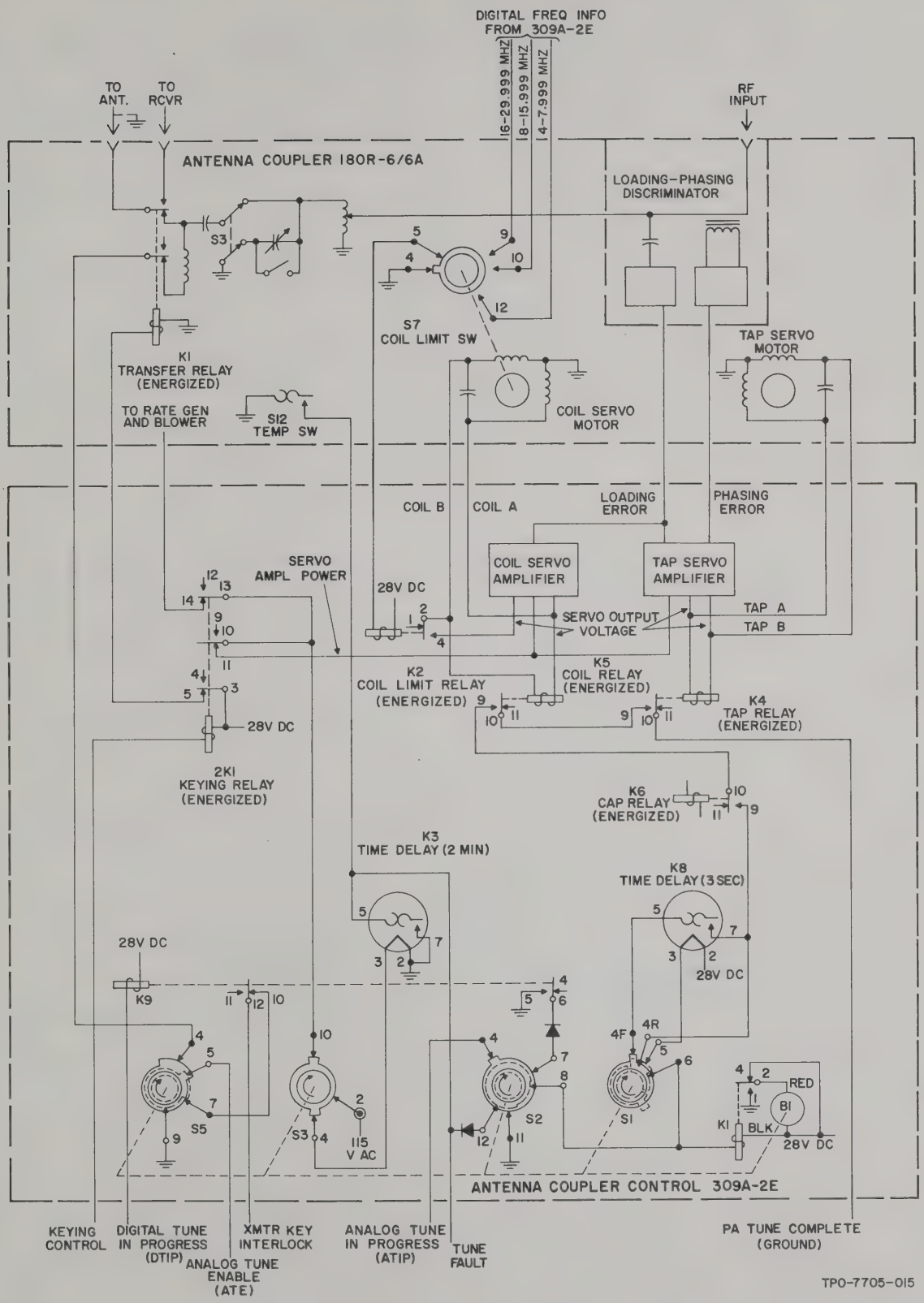


Figure 3-7. Tune Position, Simplified Schematic Diagram.

Note

If the rf on and tune positioning processes are not completed in 2 minutes, K3 will energize and apply a ground through S2-12 and -8 advancing the 309A-2E to the fault position. Similar action occurs if temperature switch S12 in the 180R-6/6A energizes due to blower failure or overheating.

3.2.7 Operate Position

Figure 3-12 shows a simplified schematic diagram of the operate position. A ground is placed on the coupler tune complete line through S2-5 and -11. The grounds are removed from the ATE and ATIP lines. K3 is removed from the fault circuit, but temperature switch S12 in the 180R-6/6A remains connected and the antenna circuit must continue to furnish a ground to the transmitter key interlock line. The coupler is now ready for transmission.

3.3 FAULT CIRCUITS

In the fault position, the DTIP circuit remains complete through S2-7 and the transmitter key interlock circuit is broken by opening S5-4 and -7. The tuning cycle must be started again to move out of the fault position.

3.4 RATE GENERATORS

The tap and coil motors in the 180R-6/6A also drive rate generators. The rate generators produce an ac output level proportional to the speed of rotation. These signals are coupled into the servo amplifiers in the 309A-2E and oppose the error signals from the corresponding discriminator. If a large error signal is produced, a large opposing signal is produced, keeping the resultant voltage at the proper level to correctly run the coil and tap.

3.5 SWR DETECTOR (Refer to figure 6-1.)

The standing-wave ratio detector circuit provides a means of checking the standing-wave ratio on the transmission line between the transmitter and the 180R-6/6A. This circuit is made up of diode CR1, capacitors C3 and C4, and load resistor R4, connected across the loading discriminator. When a 50-ohm resistive load is sensed by the discriminators, the voltages produced are equal and in phase, and the swr circuit does not produce an output. If the load is not 50 ohms, or the impedance does not appear resistive, the voltages are unequal and CR1 conducts, producing a dc voltage proportional to the difference. This voltage is applied to J5-2 of the 309A-2E.

3.6 DISCRIMINATOR OPERATION

The discriminator circuits in the 309A-2E analyze the antenna impedance to correctly match the antenna to the 50-ohm resistive output impedance of the transmitter. The phasing discriminator determines whether the antenna appears capacitive, inductive, or resistive. The loading discriminator determines whether the antenna load is equal to, greater than, or less than 50 ohms. The discriminators produce polarized outputs proportional to the phasing and loading errors. These outputs are coupled to associated 5-watt dc servo amplifiers.

3.6.1 Phasing Discriminator (Refer to figure 3-13.)

Phasing discriminator input transformer T2 uses the transmission line as its primary winding. This, along with the capacitive voltage divider formed by the distributed capacitance

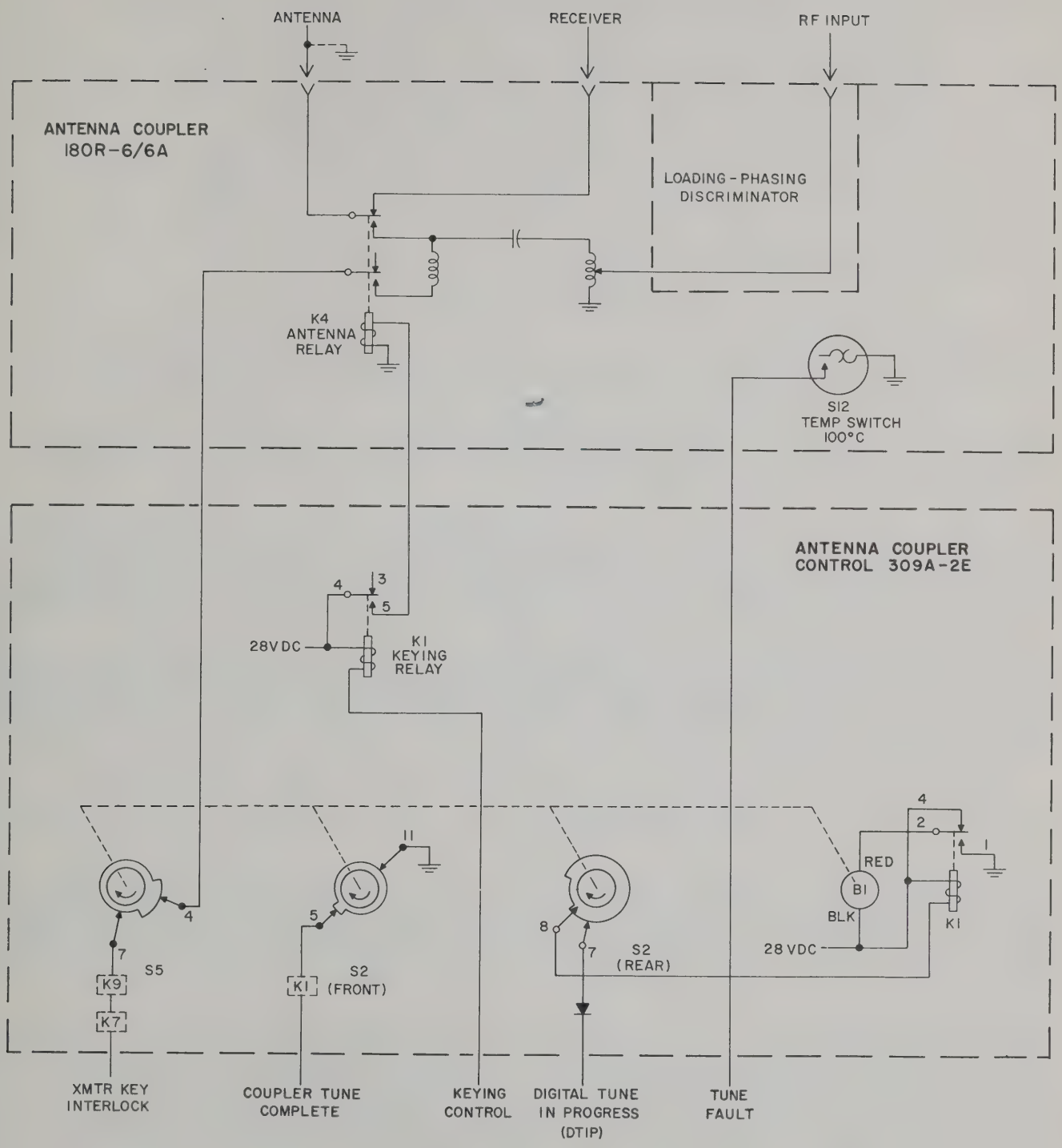


Figure 3-12. Operate Position, Simplified Schematic Diagram.

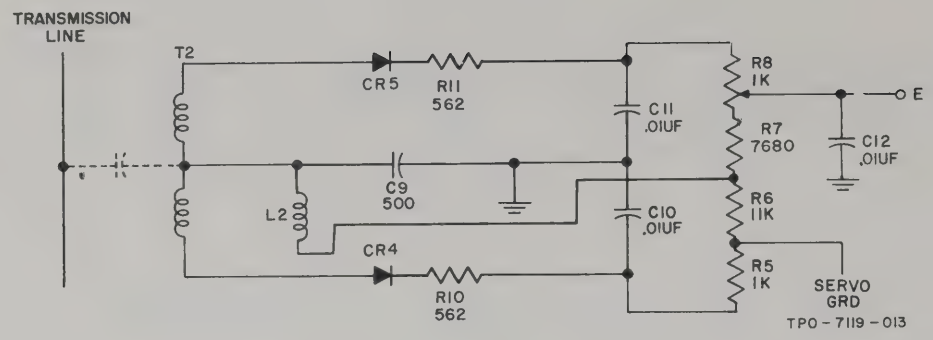


Figure 3-13. Phasing Discriminator, Simplified Schematic Diagram.

of T2 and C9, permits the discriminator to use the phase difference between transmission line current and transmission line voltage to position the tuning elements of the 180R-6/6A.

When the antenna tuning elements are correctly positioned, the voltage developed across R5 and R6 is equal in amplitude to the voltage developed across R7 and R8, but opposite in polarity. The resultant error voltage from point E to servo ground is zero.

When the antenna appears capacitive, the transmission line current leads the transmission line voltage. This condition results in a greater voltage being developed across R5 and R6 than across R7 and R8. These voltages are opposing and the difference is a positive voltage from point E to servo ground.

The transmission line voltage will lead the transmission line current when the antenna appears inductive. The voltage developed across R7 and R8 will be greater than the voltage developed across R5 and R6. These voltages are opposing and the difference will be a negative error voltage from point E to servo ground.

3.6.2 Loading Discriminator (Refer to figure 3-14.)

Input transformer T1 in the loading discriminator also uses the transmission line as its primary winding. The ac voltage coupled into the secondary winding is rectified by CR2, producing a dc voltage across load resistor R2 proportional to the transmission line current. Capacitors C5, C6, and C7 form a 30:1 capacitive voltage divider to ground from the transmission line. A sample of the voltage across the voltage divider is developed across C7.

When the antenna impedance is more than 50 ohms, the voltage across the divider is greater than the voltage induced into the secondary of T1. This develops a greater voltage across R3 than across R2, resulting in a positive error voltage from point C to servo ground. When the antenna impedance is less than 50 ohms, the voltage induced into the secondary of T1 is greater than the voltage across the voltage divider. This results in a greater voltage drop across R2 than across R3, and a negative error voltage is developed from point C to servo ground. When the voltages across R2 and R3 are equal, the antenna is matched to the 50-ohm impedance of the transmitter output and no error voltage is developed.

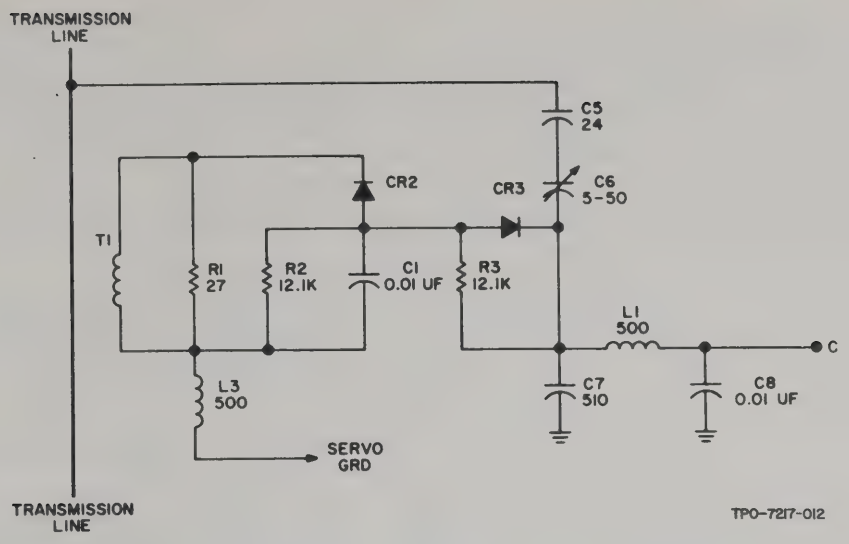


Figure 3-14. Loading Discriminator, Simplified Schematic Diagram.

3.6.3 Differential Mixing of Loading and Phasing Errors

The error voltages from the loading and phasing discriminators are differentially mixed by the choppers in both the tap and coil servo amplifiers. Figure 3-15 is a simplified schematic diagram of the mixing circuits. Assume a loading error of +1 volt and a phasing error of +1 volt. The +1-volt error signal from the loading discriminator is applied to one contact of the tap servo chopper and the +1-volt error signal from the phasing discriminator is applied to the other contact of the tap servo chopper. With no difference of potential across the contacts, there is no differential voltage and the tap servo is not actuated. At the same time both error signals are applied to one contact of the coil servo chopper. This results in a 1-volt differential voltage and the coil servo will be actuated. In this manner, either discriminator may run either servo motor. After the major error has been resolved, either discriminator may assume control for final tuning.

Differential mixing of loading and phasing errors ensures that the tuning elements are driven to the correct phasing point. While a false phasing point may satisfy one discriminator, the other one will not be satisfied and will drive the tuning elements until a true phasing point is reached.

3.7 5-WATT DC SERVO AMPLIFIERS

The tap and coil servo amplifiers (figures 6-5, 6-6, and 6-7) convert and amplify the error signals from the loading-phasing discriminator to 400 Hz. These amplified signals are used to power the tap and coil motors in the 180R-6/6A. Operation of both servo amplifiers is identical except for the application of input error signals; therefore, the following text applies to both units.

The low-level dc output from the loading discriminator is fed into J1-D of the tap servo amplifier. The low-level dc output from the phasing discriminator is fed into J1-C of the same amplifier. Both loading and phasing outputs are fed into J1-C of the coil servo amplifier.

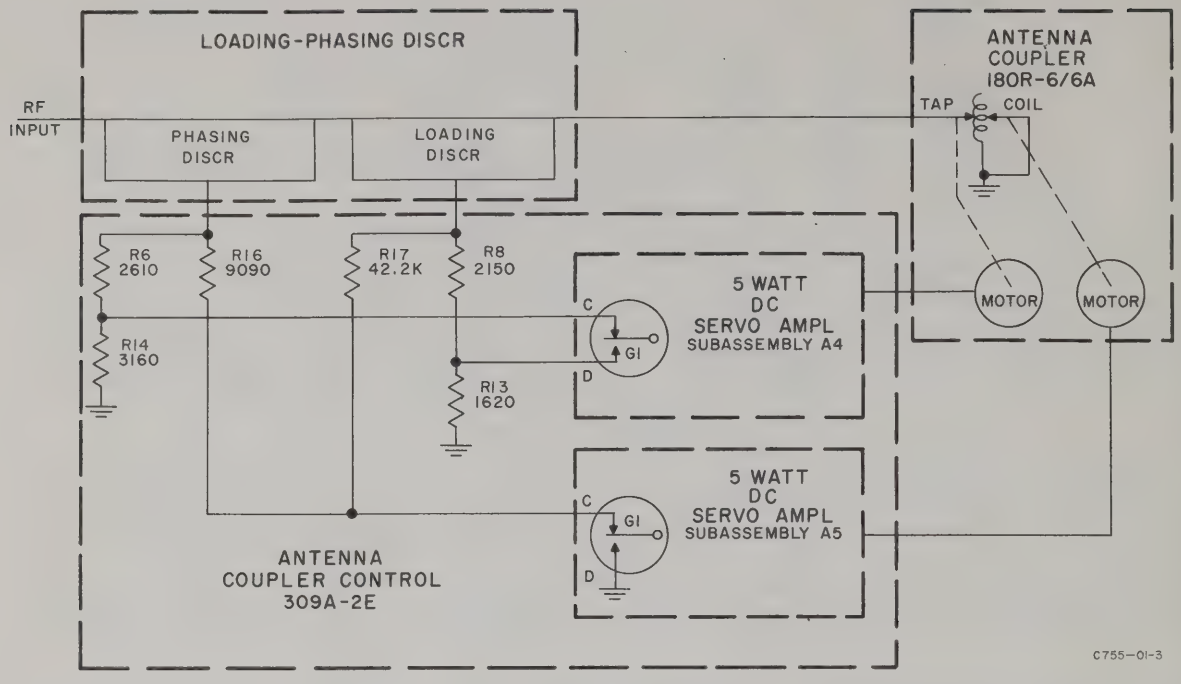


Figure 3-15. Phasing and Loading Circuits, Simplified Schematic Diagram.

The chopper coil is controlled by the 400-Hz square wave (figure 3-16). The signal is amplified and fed to a balanced phase detector through a bridge network that combines the error signal and a portion of the 115-volt, 400-Hz input power. This provides two reference voltages equal in amplitude, but 180° out of phase. The error signal is in phase with one of the reference voltages and out of phase with the other. This causes one end of saturable reactor MR1 (figure 3-17) to saturate and drive the servo motor in the proper direction to correct the error. In figure 3-17, Eg_1 and Eg_2 represent the two reference voltages developed across T1 and Eg_3 represents the error signal. With no error signal input, IR_1 is equal to IR_2, coupling equal voltages across both ends of MR1 preventing the servo motor from running.

Assume an error signal in phase with EG_1 causing IR_1 to be greater than IR_2. The upper end of MR1 will saturate and drive the servo motor in one direction. The lower end of MR1 will saturate when IR_2 is greater than IR_1, and the servo motor will run in the reverse direction.

The power supply of the servo amplifier (figure 6-5, 6-6, or 6-7) uses CR4 and CR5 to provide full-wave rectification of the 75-volt, 400-Hz voltage across each half of T1. The filtered output is 70 ±2 volts B+.

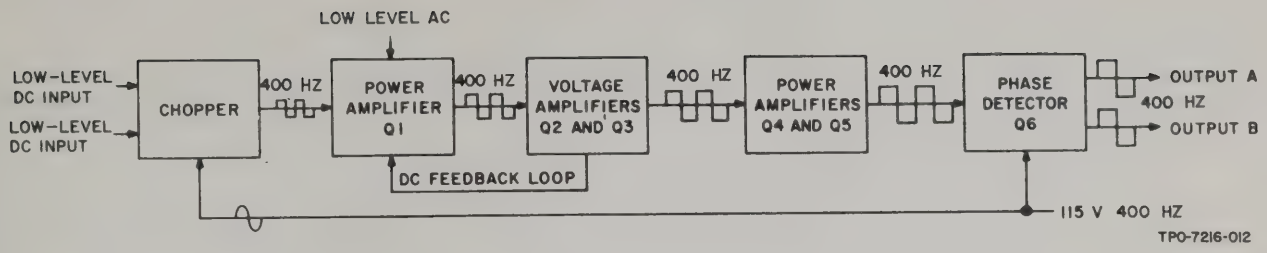


Figure 3-16. 5-Watt DC Servo Amplifier, Block Diagram.

3.8 156G-1 RECEIVER COUPLER

The 309A-2E has provisions for three 156G-1 Receiver Coupler subassemblies (figure 6-8). The subassemblies are used to couple the received rf signals to their associated receivers. The 309A-2E may be operated without the subassemblies; however, if they are used, all must be in place since the input filters act as an artificial transmission line terminated by R1 in the last multicoupler. Transformer T1 is the 12.6-volt filament transformer and also provides 120 volts B+ for V1. This voltage is rectified by CR1. All three subassemblies are identical and interchangeable.

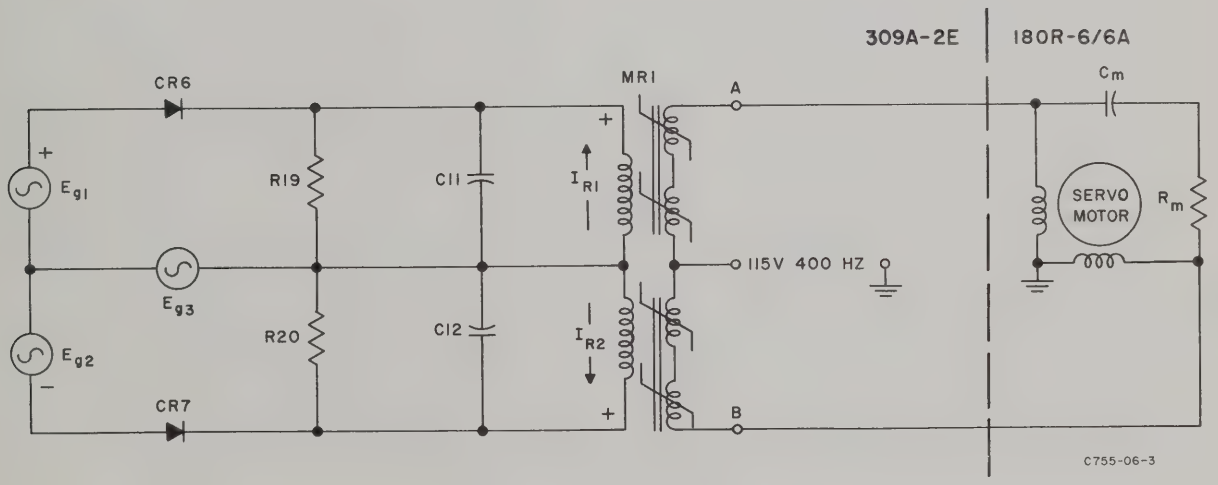


Figure 3-17. Phase Detector, 5-Watt DC Servo Amplifier, Simplified Schematic Diagram.

section 4
maintenance

4.1 PREVENTIVE MAINTENANCE

4.1.1 General

It is recommended that no scheduled preventive maintenance be performed; however, if the 180R-6/6A or 309A-2E is opened for any reason, the inspection listed in paragraph 4.1.2 should be performed.

4.1.2 Inspection

a. Examine chassis for dents, damaged fasteners, damaged handles, or corrosion.
b. Examine rf coils for cracks, broken leads, or cut or charred windings.
c. Examine gears for broken, chipped, or badly worn teeth. Examine gear bodies for cracks.
d. Examine insulators for cracks, chipped or broken edges, and burned areas.
e. Examine silver coil tape for kinks, creases, dents, or corrosion.
f. Examine variable capacitors for binding shafts, loose mountings, corrosion, or evidence of arcing.
g. Examine connectors and jacks for broken, corroded, or damaged contacts.
h. Examine printed circuit boards for loose, broken, or corroded terminals; burned, cracked, or broken printed wiring; and cracked or broken boards.
i. Examine resistors for signs of overheating.
j. Examine rotary switches for bent, broken, or corroded contacts; cracked or broken insulators; and evidence of arcing. Ensure that movable contacts are free to rotate without binding.
k. Examine transformers and reactors for evidence of excessive heat.
l. Check for damage or charred insulation of all wiring on the chassis.
m. Loosen dust and other foreign material with a soft brush and remove with a vacuum hose.
n. Clean the air-filter element using a solvent, such as Turcosol or Stoddard, and blow dry (reverse of normal airflow) with air jet. Spray with or dip in light oil and drain for 24 hours.
o. Clean silver coil tape with a clean pencil eraser; wipe clean with a lint-free cloth.

Table 4-1. Test Equipment Required.

INSTRUMENT	RECOMMENDED TYPE
Amplifier test set	Collins 878L-1 (522-3022-00)
Relay control test set	Collins 878L-2 (522-3271-00)
Discriminator test set	Collins 878L-3 (522-3272-00)

Table 4-1. Test Equipment Required (Cont).

INSTRUMENT	RECOMMENDED TYPE
Vtvm	HP-4103
Probe-T-connector	HP-11042A
Ac voltmeter	Weston 904
Decade resistance box (two)	General Radio 1432-M
Hf transmitter	Collins 618T-( )
Hf transmitter control	Collins 714E-( )

4.2 ELECTRICAL ADJUSTMENTS OF THE SERVO AMPLIFIER

4.2.1 General

These requirements apply to servo amplifiers, Collins part numbers 528-0531-001, 528-0023-005, and 543-3461-004 (figures 6-5, 6-6, and 6-7). The equipment listed in table 4-1, or equivalent, is required to perform the specified tests.

4.2.2 Test Conditions

Unless otherwise specified, all tests shall be performed under the following conditions.

Power source ..... 115 ±5 volts, 400 ±5 Hz with less than 3% harmonic distortion.

Humidity, temperature, and atmospheric pressure ..... Normal factory ambient.

Shielding and isolation required ..... None.

Operational duty cycle ..... Continuous.

Warmup period ..... None.

Note

The servo amplifier may be plugged into a pendant cable for troubleshooting; however, all gain calibration, balancing, and biasing must be done with the servo amplifier plugged directly into the test set.

4.2.3 Initial Adjustments

a. Connect the 878L-1 to the primary power source.

Warning

To avoid shock hazard, ensure that the POWER ON-OFF switch is set to OFF when inserting or removing the servo amplifier.

b. Plug the servo amplifier under test into the socket provided on the front panel of the 878L-1.
c. Set the 878L-1 POWER ON-OFF switch to ON.
d. Adjust the INPUT VOLTAGE control for a 115-volt indication on the 878L-1 meter.

4.2.4 Selection of a Bias Resistor and Adjustment of Balance Control

a. With the INPUT CONTROL switch at BALANCE and the VARIABLE INPUT control at 0, connect an ac voltmeter across the BIAS terminals.
b. For servo amplifier 528-0023-005 or 528-0531-001, substitute a decade resistance box for R13. Adjust the resistance for 30 ±2 volts across the BIAS terminals.
c. For servo amplifier 543-3461-004, substitute decade resistance boxes for R13 and R14. Beginning with 0 ohm for R14 and 33,000 ohms for R13 and maintaining their total resistance as near to 33,000 ohms as possible, adjust the resistances for 30 ±2 volts across the BIAS terminals.
d. Connect the ac voltmeter across the BALANCE terminals, and adjust balance control R17 in the servo amplifier for a null on the voltmeter.
e. Interaction of the bias and balance settings will occur; readjust bias and balance settings until both are correct. When resistance values for R13 and/or R14 are determined, install the nearest 5-percent tolerance, 1/2-watt resistors. Recheck the bias voltage.
f. Repeat the entire procedure until all requirements are met.

4.2.5 Gain Calibration

a. Set the LEVEL CONTROL FOR TERM. C & D switch to LOW and the INPUT CONTROL switch to TERM. C. The 878L-1 torque indicator should deflect to the left and indicate 0.55 inch-ounce.

Note

Before calibrating the servo amplifier, allow the test set servo motor to warm up for about 5 minutes at approximately 0.5 inch-ounce. During gain calibration, monitor the line voltage continuously since amplifier gain is affected by line voltage.

b. Adjust R5 on the servo amplifier for the 0.55 inch-ounce indication required in step a, if necessary.
c. Check and if necessary readjust the balance adjustment (paragraph 4.2.4, step d).
d. Set the INPUT CONTROL to TERM. D. The torquemeter should deflect to the right, and indicate 0.55 inch-ounce. If it does not, adjust R5 on the servo amplifier until the torque indicator indicates as much above 0.55 inch-ounce in one direction as it does below 0.55 inch-ounce in the other direction. The difference between these two indications must not exceed 0.2 inch-ounce.

4.2.6 High-Level Input Check

Set the LEVEL CONTROL FOR TERM. C & D switch to HIGH and the INPUT CONTROL switch to TERM. C or TERM. D. The torquemeter should indicate no less than 1.08 inch-ounces.

4.2.7 AC Input Check

Set the INPUT CONTROL to TERM. B. The torquemeter should deflect to the right and indicate between 0.21 and 0.35 inch-ounce.

4.3 FUNCTIONAL CHECK AND MECHANICAL ALIGNMENT OF THE RELAY CONTROL MODULE

4.3.1 General

These test requirements apply to the relay control module, Collins part number 528-0154-005. All tests are performed using Collins 878L-2 Relay Control Test Set. Figure 6-4 shows the schematic diagram of the relay control module.

4.3.2 Test Conditions

Unless otherwise specified, all tests shall be performed under the following conditions.

Power source ..... 115 ±5 volts, 400 ±10 Hz, 75 watts maximum.

Temperature, humidity, and pressure ..... Normal factory ambient.

Shielding and isolation required ..... None.

Operational duty cycle..... Continuous.

Warmup period ..... None.

4.3.3 Initial Adjustments

Make the following adjustments to the 878L-2.

a. Set FUNCTION CHECK switch to START (turn switch clockwise only).

b. Turn RELAY TEST VOLTAGE CONTROL complete counterclockwise.

c. Set RESISTOR SELECTOR OHMS switches to OFF.

d. Set MODULE SELECTION switch to the 528-0154-005 position.

e. Set CONTROL GROUND switch to PULSE.

f. Plug in module and turn POWER switch to ON.

4.3.4 Test Requirements

a. Turn the FUNCTION CHECK switch to position 2. Indicator lights number 16 should match (both lights, one above and one below number 16, should light).

Note

If any test requirements of this section are not met, refer to paragraph 4.7 of this book.

b. Turn the FUNCTION CHECK switch to position 3. Dc voltage indicated on the 878L-2 panel meter should be not more than 29 volts and not less than 26 volts. Ignore tester lights. The module may switch to home position.
c. Turn the FUNCTION CHECK switch to position 4. Indicators 2, 8, 11, 13, 16, 18, 19, 23, 33, 34, 37, 39, and 50 should match.
d. Relay control module switch S1 should be in the home position as shown in figure 4-1; about one-third of the rotor blade into clip number 1 and two-thirds of the rotor blade between clip number 1 and clip number 12, but not touching clip number 12. If adjustment of S1 is necessary, loosen the setscrews in the tension ring behind S1, make the necessary adjustment, and retighten the setscrews.

Note

Care should be taken when retightening setscrews to ensure that the tension ring does not slip on the switch shaft and short out the rotor of S1.

e. Turn the FUNCTION CHECK switch to position 5. Indicators must match as in position 4. Check 878L-2 meter for deflection in the line check area of the scale.
f. Turn the FUNCTION CHECK switch to position 6. Turn the RELAY TEST VOLTAGE CONTROL to within the proper pull-in range for K5 (53 to 57 volts). Relay K5 should pull in (upper indicators 5 and 23 go out). Indicators 2, 11, 16, 18, 19, 27, 33, 34. 37, 39, and 50 should match.
g. Decrease relay test voltage slowly until K5 drops out (upper indicators 5 and 23 light). K5 should drop out when the relay test voltage is 3 to 7 volts below the pull-in voltage.

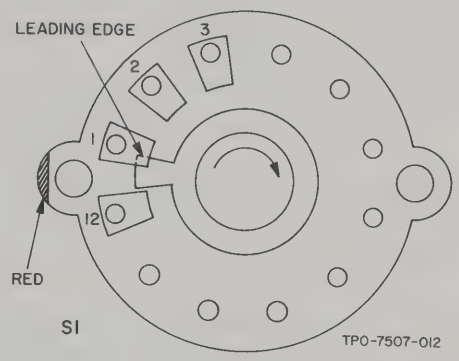


Figure 4-1. Relay Control Module, Switch S1 Rotor Position.

h. Turn the FUNCTION CHECK switch to position 7. Turn the RELAY TEST VOLTAGE CONTROL to within the proper pull-in range for K4 (68 to 72 volts). Relay K4 should pull in (upper indicator 13 goes out). Indicators 2, 11, 16, 17, 18, 19, 23, 33, 34, 37, 39, and 50 should match.
i. Decrease relay test voltage slowly until K4 drops out (upper indicator 13 lights). K4 should drop out 3 to 7 volts below the pull-in voltage.
j. Turn the FUNCTION CHECK switch to position 8. Indicators 7, 8, 11, 13, 18, 23, 33, 38, 43, 45, and 50 should match.
k. Turn the FUNCTION CHECK switch to position 9. Indicators 1, 7, 16, 17, 18, 23, 33, 38, 39, 42, 43, 44, 45, and 50 should match. Module will switch.

Note

Do not leave FUNCTION CHECK switch in position 10, 11, or 12 for more than 1 minute. Damage to the module resistors may result.

l. Turn the FUNCTION CHECK switch to position 10. Indicators 1, 5, 7, 16, 18, 27, 37, 38, 39, 42, 43, 44, 45, and 50 should match.
m. Turn the FUNCTION CHECK switch to position 11. Indicators 1, 7, 8, 16, 18, 33, 38, 39, 42, 43, 44, and 50 should match.
n. Turn the FUNCTION CHECK switch to position 12. Indicators 1, 7, 16, 18, 23, 33, 38, 39, 42, 43, 46, and 50 should match. Module will switch.
o. Turn the FUNCTION CHECK switch to position 13. Momentarily depress the TIME DELAY TEST switch. Module will switch after approximately 13 seconds and upper indicator 6 will light. Indicators 1, 6, 7, 16, 18, 23, 27, 33, 38, 39, 42, 45, and 50 should match.
p. Turn FUNCTION CHECK switch to position 14. Indicators 1, 2, 5, 7, 16, 18, 23, 33, 39, 45, and 50 should match.
q. Turn the FUNCTION CHECK switch to position 15. Indicators 2, 16, 17, 18, 19, 23, 33, 34, 37, 39, and 50 should match. Module will switch.
r. Turn the FUNCTION CHECK switch to position 16. Indicators 1, 7, 16, 18, 23, 33, 38, 39, 42, 43, 44, 45, and 50 should match. After a time delay of 75 to 135 seconds, module will switch. Again check for matched indicators. Upper indicator 18 will go out approximately 6 seconds after module switches. Do not switch to position 17 until upper indicator 18 goes out.
s. Turn the FUNCTION CHECK switch to position 17. Indicators 2, 16, 18, 19, 23, 33, 34, 37, 39, and 50 should match. Module will switch.

4.4 DISCRIMINATOR FUNCTIONAL CHECK

4.4.1 General

These test requirements apply to the loading-phasing discriminator, using an 878L-3 test set. Schematic diagrams of the loading-phasing discriminator are found in figures 6-1 and 6-2. See table 4-1 for recommended test equipment.

4.4.2 Test Requirements

a. Connect discriminator module connector J2 to the 878L-3 pendant cable. Connect an hf transmitter to J1 of the discriminator through one-half of a probe-T-connector. Connect a vtvm to the other half of the probe-T-connector.

Note

Tighten the module holddown screws.

b. Connect the proper transmitter control and energize the transmitter at 8 MHz. Set both 878L-3 switches to POWER.
c. Key the transmitter and adjust it for 70.7 volts on the vtvm (100 watts). The 878L-3 meter should deflect to the area marked POWER CHECK. Unkey the transmitter.

Note

Unkey the transmitter after each meter reading. No further instructions will be given to do so.

d. Disconnect the 878L-3 pendant cable. Set the 878L-3 METER INDICATION switch to PHASING, set the transmitter to 29.999 MHz, and key. The 878L-3 meter should indicate -0.1.
e. Set the METER INDICATION switch to loading, the transmitter to 8 MHz, and key. The 878L-3 meter should indicate 0.

4.5 180R-6/6A ANTENNA COUPLER DISASSEMBLY

4.5.1 General

Disassembly of the 180R-6 or 180R-6A Antenna Coupler is identical with the exception of the antenna proving circuit in the 180R-6A. During disassembly procedures, it will be necessary to disconnect many interconnecting wires; all wires should be identified (tagged) to facilitate reassembly. Tag all bearings to ensure replacement in the same location. If a press-fit porous bronze bearing is removed, it must be replaced with a new bearing. Do not disassemble the 180R-6/6A any further than is necessary to replace a worn or broken part.

4.5.2 Case Removal

Remove screws around the front panel flange, and withdraw the chassis from the case. Care must be used in withdrawing the 180R-6/6A from the case to prevent damage to switches or components projecting from the chassis.

4.5.3 Case (Refer to figure 5-2.)

a. Remove screws (2) and remove filter cover (1).
b. Remove filter (3).
c. Remove bushing (23) by unscrewing nuts (24).
d. Remove retaining ring (22) and withdraw locating pin (20) and spring (21) from bushing (23).
e. Remove self-locking nut (29) by drilling out rivet (30).
f. Remove screws (7), lockwasher (8), and brass electrical lead (6).
g. Remove screws (14A, 17) and washers (14B, 18), and remove insulator (16).
h. Remove posts (13, 14) and washers (28).

4.5.4 Front Panel

a. Remove loading-phasing discriminator (35).
b. Remove five screws (39, 40); remove nuts (41), washers (42), terminal lug (43), and stud (44) attaching front cover (94A/95) to end plate (125). Remove screw (101) and washers (102), and swing lug (103) away.
c. Swing away front cover (94A/95).
d. Remove capacitor assembly (69) by removing screws (70), washer (71), and terminal lug (72).
e. Remove rf filter assembly (82) by removing screws (83, 86) and washers (84, 87).
f. Unscrew rf connector (36).
g. Remove screws (46) and angle mounting (45).
h. Remove screws (48) and angle mounting (47).
i. Remove nut (50) and connector (49).
j. Remove posts (53) and connector (51).
k. Remove connector (55).
l. Remove screw (57), washer (58), and contact (56).
m. Remove post (59) and stud (60).

n. Remove post (61), washer (63), terminal (64), and stud (62).
o. Remove core screw (66) and washers (67, 68), and remove core (65).
p. Remove connector (94).
q. Remove connector (37).

4.5.5 Blower

a. Loosen screw (98), remove nut (96B), washer (96D), screw (96E), and clamp (96A), and remove blower exhaust adapter (96) and clamp (97).
b. Remove screws (105) and remove vaneaxial fan (104).

4.5.6 Forward End Plate

a. Remove five screws (100) and swing end plate (125) free.
b. Lift out cable assembly (136).
c. Remove shaft (144); electrical contact assembly (146) will be free.
d. Disassemble electrical contact assembly (146).
e. The capacitors (109) may be removed by removing screws (107) and washers (108) from retainers (106). Remove screws (111) to remove the bracket (110).
f. Remove the six screws (113) and the coil supports (112).
g. Disassemble coil supports (112) by removing retaining ring (115) and roller (114) from coil support (112).
h. Remove brass terminals (116) by removing screws (117).
i. Remove screws (119) to remove center-tap support (118).
j. Remove screws (121) and thermostatic switch (120).
k. Remove screws (123), thermostatic switch (122), and spacers (124).
l. Loosen setscrew (127); remove screw (128), washer (129), and spacer post (126).
m. Squeeze out spring pin (142), remove spur gear shaft (141), and remove bearing (143).
n. Remove two screws (158) and remove shaft retaining plate (157).
o. Remove screw (134), washer (135), and shaft (133).
p. Remove screw (486), collar (484), and shaft (133).
q. Remove screw (486), collar (484), and shaft (126).

4.5.7 Loading Drum

a. Wind silver ribbon on the ceramic drum, secure with adhesive tape, and unsolder ribbon from lug (183).
b. Remove switch wafer (356) by removing screws (357) and spacers (358/359).
c. Remove drum assembly (187) from gearplate (387/394).
d. Remove screws (163) and slowly remove spur gear (162) from gear hub (164).
e. Remove spring pin (165) and slowly withdraw gear hub (164).
f. Remove screws (167) and washers (168).
g. Withdraw drum end-plate assembly (166/173).
h. Remove nut (169), washer (170), and screw (171).
i. Remove drum end plate (166/173), and press out bearing (172).
j. Remove screw (175) and washer (176) to free spring (174).
k. Remove setscrew (178) and remove spring support (177).
l. Remove screws (181) and washers (182); withdraw end-plate assembly (180/186).
m. Press out bearings (184), remove contact (185), and remove bearings (161).

4.5.8 Tap Gear Subassembly

a. Rotate the tap gear subassembly (188) to the front end of rf coil form (242), and remove the two subassemblies. Lift contacts (189, 190) during removal of the units to prevent damage to the contact faces.
b. Remove contacts (189, 190) from the center-tap assembly by removing two screws (191, 192) and washer (193).

Note

Tag posts 194, 202, 203, and 204 upon removal since they must be replaced in the exact location on the contact ring because of the spiral path they must follow.

c. Disassemble contact ring (212) from rollers (198) and posts (194, 202, 203, 204) by removing screws (199) and washers (200, 201).
d. Remove shafts (196, 206, 207, 208) by removing screws (210) and stop pins (197, 209).

4.5.9 RF Coil Subassembly

a. Remove spring pin (220) from bolting flange (223).
b. Remove rf coil subassembly (242) from shaft (219/222), and remove corona shield (246).
c. Loosen setscrews (244) and remove shaft (219/222).
d. Remove bearings (245).

4.5.10 Antenna Proving Circuit (180R-6A Only)

a. Remove busbar (256R) by removing screw (256S), washer (256T), nut (256U), washers (256V, 256W, 256X), and stud (284).
b. Remove terminal board (256A/256Q) by removing three screws (256B), washers (256E, 256F), and lug (256G).
c. Remove posts (256C) and washers (274, 256E).
d. Remove post (256D), lug (273), and washers (272, 274).

4.5.11 Switches S3, S4, and S5

a. Remove nuts (258), spacers (259), switch section (257), and spacer sleeves (260) from screws (261A) and washers (261).
b. Remove retainer ring (262) and washers (263, 263A, 263B) from shaft (415). Do not disturb bearing (300).
c. Remove nuts (277) and washers (278, 265X, 256W) from stud (266); remove insulator plate (299/301).
d. Remove standoffs (269, 270) and studs (266, 267, 268).

4.5.12 Switches S7 and S10

a. Remove screws (313), spacers (314), switch (311), spacers (315), switch (312), and spacers (314) from bracket (318).
b. Remove screws (319, 320), washers (321), and bracket (318).
c. Shaft (133) and collar (322) will fall free.
d. Loosen setscrews (317) and slide cam (316) off shaft (428).
e. Remove spring (325), loosen setscrews (324), and pull the stop actuator (323) from the shaft of detent drum stop (352). Remove (352).
f. Remove screw (327) and washers (328, 329) to remove contact (326).

4.5.13 Relay K1

a. Remove retaining ring (333) and washers (334, 334A).
b. Remove screws (331) and insulator plate (330).
c. Remove silver ribbons (335/336) by loosening setscrews (337).
d. Remove standoff insulators (338).
e. Remove nylon clamp (249) by removing screw (250) and washer (251). Swing neon lamp (252) away.
f. Remove relay (340) with nut (part of 340) and washers (341).

4.5.14 Gear Subassemblies

a. Remove screw (367), washer (368), and gear (366; 40 teeth).
b. Remove screw (372), washer (373), and gear (371; 52 teeth).
c. Remove screw (375), washer (376), and gear (374; 20 teeth).
d. Remove screws (378), spacers (379), switch (377), and spacers (380).
e. Remove screws (481, 485, 388) (do not remove screw 483) from gearplate (221), and remove gearplate (221; including motors and capacitor). Remove spring (414), shaft (415), and bearing (492).
f. Remove gear assembly (402) and bearings (395A).
g. Remove gearshaft assembly (397) and bearings (395A).
h. Remove gear assembly (396; spur gear with 60 teeth, gearshaft with 18 teeth) and bearings (395A).
i. Remove gear assembly (395; gearshaft with 24 teeth, spur gear with 30 teeth), and bearings (395A, 490).
j. Remove all shims and note their positions for reassembly.
k. Remove gear cam assembly (442) and bearings (392, 492).
l. Remove gear assembly (440; gear with 84 teeth, gearshaft with 18 teeth) and bearings (441).
m. Remove gear assembly (435; gear with 68 teeth, gearshaft with 30 teeth) and bearings (436).
n. Remove gear assembly (430) and bearings (431).
o. Remove gear assembly (437; gear with 56 teeth, gearshaft with 18 teeth) and bearings (439A).
p. Remove gear assembly (439; gear with 96 teeth, gearshaft with 18 teeth) and bearing (439A).
q. Remove spring (381) and screw (382).
r. Remove retaining ring (384), stop arm (383), screws (386), and stop pin (385).
s. Remove gear assembly (418), bearings (370, 393, 419), and retaining ring (369).
t. Remove gear (416; two gears, one with 100 teeth and one with 19 teeth) and bearings (417).
u. Remove gear assembly (425; gear with 49 teeth, gearshaft with 20 teeth), bearing (425A), and washer (425B).
v. Remove gear assembly (420; with 30 teeth) and bearings (421).
w. Remove gear assembly (422; with 48 teeth), washer (425B), and bearings (425A).
x. Remove gear assembly (423; with 42 teeth, gearshaft with 20 teeth), washer (425B), and bearings (425A).
y. Remove gear (424; gear with 54 teeth, shaft with 20 teeth), washer (425B), and bearing (425A).
z. Remove spur gear assembly (426; with 64 teeth) and bearings (492, 392).
aa. Remove gearshaft assembly (413; with 112 teeth) by removing retaining ring (360), shims (361), and bearings (364).
ab. Remove gear (411; with 24 teeth) and bearings (391, 491).
ac. Remove spring pin (409) and pull gear (408; with 35 teeth) from shaft (410).

ad. Remove gear (412; shaft gear with 24 teeth, spur gear with 81 teeth) and bearing (391, 491).
ae. Remove screws (451) and remove motors (450).
af. Remove screws (453) and remove motor (452).
ag. Remove bearing (455) and unscrew (counterclockwise) gearshaft assembly (part of 462).
ah. Remove screws (472) and lift capacitor assembly free.

4.6 180R-6/6A ANTENNA COUPLER ASSEMBLY

4.6.1 General

Assembly of the 180R-6 and the 180R-6A is identical with the exception of the antenna proving circuit in the 180R-6A. During assembly procedures it will be necessary to reconnect many interconnecting wires; be certain to follow the identification marking that was made during disassembly of the unit.

4.6.2 Gear Subassemblies (Refer to figure 5-2.)

a. Replace capacitor assembly (463, 469) on gearplate (489) using screws (472).
b. Screw (clockwise) the gearshaft assembly (part of 463) into corona shield (469), and replace bearing (455).
c. Secure motors (450) and motor (452) to gearplate (489) using screws (451, 453).
d. Replace gear (408) on shaft (410), and secure with spring pin (409). Replace bearings (492, 392) and gearshaft assembly (407).
e. Replace bearings (391, 491) and install gear (412; shaft gear with 24 teeth, spur gear with 81 teeth) on gearplate.
f. Replace bearings (391, 491), and install gear (411; with 24 teeth) on gearplate.
g. Replace bearings (364), gearshaft assembly (413; with 112 teeth), shims (361), and retaining ring (360).
h. Replace bearings (425A), washers (425B), and gear assembly (424).
i. Replace bearings (392, 492), and slide gearshaft assembly (426) into gearplate.
j. Replace bearings (425A) and washer (425B), and install gear assembly (423; gear with 42 teeth, gearshaft with 20 teeth).
k. Replace bearings (425A) and washer (425B), and install gear assembly (422; with 48 teeth).
l. Replace bearings (421) and install gear assembly (420; with 30 teeth).
m. Replace bearings (425A) and washer (425B), and install gear assembly (425; gear with 49 teeth, shaft with 20 teeth).
n. Replace bearings (417) and gear (416; two gears, one with 100 teeth and one with 19 teeth).
o. Replace bearings (370, 393, 419) and install gear assembly (418) with retaining ring (369).
p. Secure stop pin (385) to gearplate with screws (386). Slide stop arm (383) on stop pin (385), and snap on retaining ring (384). Install screw (382) and connect spring (381) between stop arm (383) and screw (382).
q. Replace bearings (439A) and install gear assembly (439; gear with 96 teeth, gearshaft with 18 teeth).
r. Replace bearings (439A) and install gear assembly (437; gear with 56 teeth, gearshaft with 18 teeth).
s. Replace bearings (431) and install gear assembly (430).
t. Replace bearings (436) and install gear assembly (435; gear with 68 teeth, gearshaft with 30 teeth).
u. Replace bearings (441) and install gear assembly (450; gear with 84 teeth, gearshaft with 18 teeth).
v. Replace bearings (392, 492) and install gear assembly (445).

w. Replace bearings (395A, 490) and install gear assembly (395; gearshaft with 24 teeth, spur gear with 30 teeth).
x. Replace bearings (395A) and install gear assembly (396; spur gear with 60 teeth, gearshaft with 18 teeth).
y. Install bearings (395A) and install gearshaft assembly (397).
z. Replace bearings (395A) and install gear assembly (402).
aa. Replace bearing (492), shaft (415), and spring (414).

Note

Replace all shims previously removed at this time.

ab. Secure gearplate (489; including motors and capacitor) to gearplate (387) using screws (481, 485, 488, 388).
ac. Connect spring (414) between shaft (415) and cam (413).
ad. Slide switch (377) onto shaft (449). Put spacers (379, 380) into place and secure the switch and spacers to gearplate using screws (378).
ae. Slide gear (374) onto shaft (part of 463) and secure with screw (375) and washer (376).
af. Slide gear (371) onto shaft (407) and secure with screw (372) and washer (373).
ag. Slide gear (366) onto shaft (418) and secure with screw (367) and washer (368).

4.6.3 Relay K1

a. Replace relay (340), washer (341), and nut (part of 340).
b. Replace nylon clamp (249) and neon bulb (252) with screw (250) and washer (251).
c. Replace standoff insulators (338) and secure with screws (339).
d. Replace silver ribbons (336) on relay and secure with setscrews (337).
e. Slide output pin (332) into washers (334, 334A) and then into insulator plate (330).
f. Replace insulator plate (330) and secure with screws (331).
g. Replace washer (334) on output pin and snap on retaining ring (333).
h. Replace tube (136).

4.6.4 Switches S7 and S10

a. Slide stop actuator (323) onto the shaft of detent drum stop (352). Connect spring (325), but do not tighten setscrews at this time.
b. Slide cam (316) on shaft (428). Do not tighten setscrews (317) at this time.
c. Assemble switches (311, 312) and spacers (314, 315) on screws (313). Slip the switches over shaft (428), and secure to bracket.
d. Replace bracket (318) and post (322) using screws (319, 320) and washers (321).
e. Replace contact (326) on gearplate (489) using screw (327) and washers (328, 329). Adjust contact (326) for 0.187-inch gap between its mating part.

4.6.5 Switches S3, S4, and S5, Capacitor Limiter Switches

a. Replace switch rotor (302) on shaft (415) using setscrew (302B) and pin (302A).
b. Replace studs (266, 267, 268) and standoff insulators (269, 270).
c. Replace insulator plate (299) on studs (268), and secure with washers (256X, 256W, 274), nuts (256U), and screw (256B).
d. Replace washers (263, 263A, 263B), and retaining ring (262) on shaft (415).
e. Replace screws (261A), spacers (260), switch (257), spacers (259), and nuts (258) on insulator plate (299).

4.6.6 Antenna Proving Circuit (180R-6A Only)

a. Replace post (256D), lug (273), and washers (272, 274).
b. Replace posts (256C) and washers (274, 256E).
c. Replace terminal board (256A/256Q) and secure with screws (256B), washers (256E, 256F), and lug (256G).
d. Replace busbar (256R) and secure with screw (256S), washer (256T), nut (256U), washers (256V, 256W, 256X), and stud (284).

4.6.7 RF Coil Subassembly

a. Reassemble stop tap (228) as necessary.
b. Secure stop tap (228) to coil form (242).
c. Slide rf coil assembly (242) onto shaft (219), and secure with spring pin (220).

4.6.8 Tap Gear Subassembly

a. Assemble contact ring (212), rollers (198), posts (194, 202, 203, 204) with screws (199) and washers (200, 201) to shafts (196, 206, 207, 208). Assemble contact ring assembly to gear (211) with screws (210) and pin stops (197, 209).
b. Assemble contacts (189, 190) with screws (191, 192) and washers (193).
c. Rotate the tap gear subassembly onto rf coil subassembly (218). Carefully lift contacts (189, 190) into ceramic drum groove so as not to damage contacts.

Caution

When assembling tap gear subassembly on rf coil subassembly, do not drag electrical contact (189, 190) on the ceramic drum. Also, make certain that electrical contact (189, 190) makes good contact with silver ribbon. The contact pressure must be 80 to 100 grams. Contact pressure of electrical contact (189, 190) on tap rod (144) must be 55 ±15 grams.

d. Slide spur gear (141) onto shaft (435) and secure with spring pin (142).

4.6.9 Loading Drum

a. Replace bearings (184, 161) and contact (185) on drum end plate (186).
b. Replace drum end-plate assembly (180) in loading drum (187), and secure with screws (181) and washers (182).
c. Slide spring support (177) onto shaft (179). Start, but do not tighten, setscrews (178).
d. Secure spring (174) to spring support (177) using screw (175) and washer (176).
e. Replace drum end plate (173) and bearing (172) on shaft (179).
f. Secure spring (174) to drum end plate (173) using screw (171), washer (170), and nut (169).
g. Slide gear hub (164) onto shaft (179), and secure with pin (165).
h. Compress spring (174) slightly, and tighten setscrews (178) to secure hub (177) to shaft (174).
i. Engage drum end-plate assembly (166) with drum (187), and secure with screws (167) and washers (168).
j. Secure spur gear (162) to gear hub (164) using screws (163).
k. Slide loading drum assembly (159) onto shaft (420), and secure with pin (160).
l. Solder lug (183) to the end of silver ribbon (241). Secure lug (183) to the loading drum with one of the drum end-plate screws (181) and washer (182).

Caution

Before attaching the silver ribbon to the loading drum, the loading drum should be rotated 2-1/2 turns clockwise to obtain spring loading.

4.6.10 Forward End Plate

a. Replace shaft (126) with screw (486) and collar (484).
b. Replace shaft (133) with screw (486) and collar (484).
c. Replace switch wafer (356) with screws (357) and spacers (358, 359).
d. Secure spacer post (126) to end plate (387), washers (129), and setscrews (127).
e. Secure spacing posts (133) to gearplate (387) using screw (319) and collar (322).
f. Secure thermostatic switch (122) to end plate (125) using screws (123) and spacers (124).
g. Secure thermostatic switch (120) to end plate (125) using screws (121).
h. Secure center-tap support (118) to end plate (125) with screws (119).
i. Secure brass terminals (116) to end plate (125) with screws (117).
j. Replace rollers (114) on roller support (112); secure with retaining rings (115). Secure roller supports to end plate (125) with screws (113).
k. Secure bracket (110) to end plate (125) with screws (111). Assemble capacitors (109) and retainers (106) to bracket (110), and secure with screws (107) and washers (108).
l. Slide electrical contact assembly (147 through 156) onto shaft (144). Fix shaft (144) in place on end plate (125), making certain that washers (151, 152) are on either side of, and make contact with, slipring (212).
m. Replace end plate (125), and secure with screws (100).

4.6.11 Blower

a. Secure vaneaxial fan (104) to end plate (125) with screws (105).
b. Assemble clamp (97) and exhaust adapter (96) on vaneaxial fan (104), and secure with screw (98) and washer (98A).

Caution

Make certain that screw (98) is facing almost downward; otherwise, the clamp screw will interfere with tap assembly operation.

c. Mount shaft (133) with screw (134), washer (135), and screw (100).

4.6.12 Front Panel

a. Replace connector (37).
b. Replace connector (94).
c. Secure core (65) to cover (94A) with core screw (66) and washers (67, 68).

Caution

Make certain that core is seated properly against cover.

d. Replace stud (62) in cover. Assemble terminal (64), washer (63), and post (61) on stud (62).
e. Replace stud (60) and post (59) on cover.
f. Secure contact (56) to cover using screw (57) and washer (58).
g. Replace connector (55) on cover.

h. Replace posts (53) and connector (51) on cover.
i. Replace connector (49) and nut (50) on cover.
j. Replace angle mountings (45, 47) on cover, and secure with screws (46, 48).
k. Replace connector (36).
l. Replace rf filter assembly (32), and secure with screws (83, 86) and washers (84, 87).
m. Replace capacitor assembly (69), and secure with screws (70), washer (71), and terminal lug (72).
n. Replace stud (44), and fit cover assembly (94A) to end plate (125) with screws (39, 40), nuts (41), washer (42), lug (43), and stud (44).
o. Replace lug (103) with screw (101) and washer (102).
p. Secure loading-phasing discriminator (35) to cover.

4.6.13 Case

a. Replace posts (13, 14) and washer (28).
b. Secure insulator (16) with screws (14, 17) and washers (14B, 18).
c. Secure electrical lead (6) to insulator with screw (7) and washer (8).
d. Replace self-locking nut (29) with rivet (30) if removed.
e. Replace locating pin (20) and spring (21) to bushing (23) with retaining ring (22).
f. Replace bushing (23) with nuts (24) if removed.
g. Put air-conditioning filter (3) into filter cover (1). Secure the filter cover (1) to the case with screws (2).

Caution

Before installing coupler in case, align, using instructions in paragraph 4.7.

4.7 180R-6/6A ANTENNA COUPLER ALIGNMENT AND MECHANICAL ADJUSTMENTS

4.7.1 Tap Homing Switch S14 (Refer to figure 5-2.)

a. Manually run the coil and tap to minimum against the end stop (all ribbon grounded), and check to see that S14 rotor tab (377) is centered on position 7 (bottom contact away from limit switch) and has fully engaged stator contact.
b. If rotor tab requires adjustment, loosen setscrews (443) on gear (445) and adjust as necessary; retighten setscrews (443).

4.7.2 Coil Limit Switch S7 and Coil Homing Switch S10

a. Manually run the coil to maximum against the end stop. Check to see that S7 (311) is centered on contact 4. If S7 needs adjustment, loosen setscrews (427) on gear (426), and adjust as necessary. Retighten setscrews (427).
b. Check that S10 rotor tab (316) is lying on the arm of cam (323). If rotor tab needs adjustment, loosen setscrews (317) and adjust as necessary. Retighten setscrews (317).

4.7.3 Tap Limit Switch S1

a. Manually run the coil and tap to minimum. Tap limit switch S1 (342) should operate just before (within one-eighth of a turn) the tap contacts reach the end of the silver ribbon remaining on the ceramic drum.
b. If adjustment is necessary, slightly bend the arm of S1 (342) to obtain the required results.

4.7.4 Capacitor Limit Switches S4 and S3

a. Manually run the gear train until capacitor C1 (463) is at maximum (fully extended). S3 (302) should operate just as maximum is reached.
b. If S3 does not operate, manually run the gear train back until capacitor C1 is at minimum (fully retracted). Engage the gear train with cam gear (413) (S4 driver) and manually run the gear train to engage it. Run the capacitor to maximum again, and check to see that S3 is operated just as capacitor C1 reaches maximum.
c. Check switch S3 to see that it connects C1 in shunt to the antenna just before cam (323) operates. Loosen setscrews (324) and adjust cam (323) as necessary. Retighten setscrews (324).

4.8 TROUBLESHOOTING

4.8.1 General

Troubleshooting the 180R-6/6A and the 309A-2E will fall into two general categories, system troubleshooting and module troubleshooting. Tables 4-2 through 4-5 provide step-by-step procedures for troubleshooting the 180R-6/6A and 309A-2E system and individual modules. Refer to figure 6-3 for 309A-2E chassis schematic diagram.

4.8.2 Troubleshooting the 180R-6/6A Antenna Coupler and the 309A-2E Antenna Coupler Control

Trouble analysis in the 180R-6/6A and the 309A-2E generally will consist of checking for proper sequencing of switches and relays. Table 4-2 will aid in tracing the trouble to the proper component or module.

4.8.3 Troubleshooting Procedures for the 5-Watt DC Servo Amplifier (Refer to figure 6-5, 6-6, or 6-7.)

Table 4-3 provides troubleshooting procedures for isolating a malfunction in the servo-amplifier modules, using the 878L-1 Amplifier Test Set and other common test equipment (see table 4-1). Step 1 provides overall test of the module; satisfactory completion indicates that the module is functioning properly and that no further tests are necessary. When an abnormal indication is observed, a column is provided to direct the technician to the step or procedure that should be accomplished next to isolate the malfunction to a component or circuit.

Table 4-2. Troubleshooting Procedures for the 180R-6/6A Antenna Coupler and 309A-2E Antenna Coupler Control.

SYMPTOM	PROBABLE CAUSE	REMEDY
Capacitor does not home.	Excessive mechanical friction in gear train.	Refer to disassembly, paragraph 4.5 of this book.
	B1 motor.	Replace B1.
	C2.	Replace C2.
	S3.	Clean, repair, or replace as required.

Table 4-2. Troubleshooting Procedures for the 180R-6/6A Antenna Coupler and 309A-2E Antenna Coupler Control (Cont).

SYMPTOM	PROBABLE CAUSE	REMEDY
	S4.	Clean, repair, or replace as required.
	S5.	Clean, repair, or replace as required.
Coil does not home.	Ceramic drum or aluminum shorting drum binding.	Refer to disassembly, paragraph 4.5 of this book.
	S10.	Clean, repair, or replace as necessary.
	MG2.	Replace MG2.
	C3.	Replace C3.
	S7.	Clean, repair, replace, or adjust as necessary. Note Refer to paragraph 4.7.2 for adjustment procedure of S7 and S10.
Tap does not home.	S14.	Clean, repair, replace, or adjust as necessary. Refer to paragraph 4.7.1 for adjustment procedure.
	MG3.	Replace MG3.
	C4.	Replace C4.
Coil, tap, and capacitor home properly, coupler hold operation advances the 309A-2E to rf on position, but the 309A-2E does not advance to tune position.	Transfer relay K1.	Replace K1.
	Discriminator malfunction.	Refer to paragraph 4.8.5.
The 180R-6/6A completes tuning and the 309A-2E (Cont)	S1.	Replace S1.

Table 4-2. Troubleshooting Procedures for the 180R-6/6A Antenna Coupler and 309A-2E Antenna Coupler Control (Cont).

SYMPTOM	PROBABLE CAUSE	REMEDY
(Cont) advances to operate position, but only on intermittent frequencies.	S3.	Replace S3.
	L1.	Replace L1.
		Note If S1 is replaced, refer to paragraph 4.7.3. If S3 is replaced, refer to paragraph 4.7.4.
Capacitor homes properly, but does not run during tuning. Coil and/or tap not tuned.	S7.	Clean, repair, or replace as necessary.
	Tap assembly.	Refer to disassembly, paragraph 4.5.
Coil, tap, and capacitor home properly. The 180R-6/6A and the 309A-2E advance through normal sequence, but the coil and tap hunt, jitter, or oscillate.	Loss of rate generator feedback MG2.	Replace MG2.
	MG3.	Replace MG3.
309A-2E does not advance to home position when the transmitter is rechanneled.	No ground on the PA tune complete line.	Check PA tune complete line for open.
309A-2E advances to the tune position but does not advance to operate position.	K3 not operating.	Replace K3.
	S3.	Replace or repair as necessary.
309A-2E advances to fault position.	Overheating.	Replace B4.
	S12.	Replace S12.

Table 4-3. Troubleshooting Procedures for the Servo Amplifier Module.

STEP	TEST EQUIPMENT	CONTROL SETTINGS AND INSTRUCTIONS	NORMAL INDICATION	PROCEDURE IF INDICATION IS NORMAL	PROCEDURE IF INDICATION IS ABNORMAL
1	878L-1	Connect the servo amplifier to the socket on the 878L-1. Turn POWER switch to ON. Set LEVEL CONTROL FOR TERM. C & D to LOW and INPUT CONTROL to TERM. C or TERM. D.	0.55 inch-ounce ±25 percent.	Unit is operating properly and no further tests are necessary.	If there is no torque, proceed to step 2. If torque is low, check the gain setting of R5. If torque is still low, proceed to step 2.
2	878L-1	Set INPUT CONTROL to TERM. B.	0.21 to 0.35 inch-ounce.	Proceed to step 20.	If torque is low for servo amplifier 528-0531-001 or 528-0023-005, proceed to step 5. If torque is low for servo amplifier 543-3461-004, proceed to step 3.
3	Triplett 630 Multimeter	Check resistance between terminal K and junction of C5 and R6.	0 ohm.	Proceed to step 4.	Proceed to step 6.
4	878L-1	Turn POWER switch to OFF. In the 878L-1, connect a wire from the 115-volt supply (terminal N or M) through 46.4K and 100-ohm resistors in series to ground (E2 on TB1). From the junction of the 46.4K and 100-ohm resistors, connect a wire through a 21.5K resistor (Cont)	0.50 inch-ounce ±20 percent.	Check Q1, Q2, and associated components. Replace as required.	Proceed to step 6.

Table 4-3. Troubleshooting Procedures for the Servo Amplifier Module (Cont).

STEP	TEST EQUIPMENT	CONTROL SETTINGS AND INSTRUCTIONS	NORMAL INDICATION	PROCEDURE IF INDICATION IS NORMAL	PROCEDURE IF INDICATION IS ABNORMAL
4 (Cont)		(Cont) to terminal K. Turn POWER switch to ON. Set INPUT CONTROL to BALANCE. Check torque indicator.			
5	878L-1, Tektronix 541 Oscilloscope	Set INPUT CONTROL to TERM. B. Check output at Q3 collector.	400-Hz sine wave.	Check Q1, Q2, and associated components. Replace as required.	Proceed to step 6.
6	878L-1, Triplett 630 Multimeter	Set INPUT CONTROL to TERM. C. Set LEVEL CONTROL FOR TERM. C & D to VARIABLE. Adjust VARIABLE INPUT potentiometer from maximum clockwise position with multimeter connected across test points J2 and J3 on the servo amplifier. Use the 300-volt ac scale and observe meter indication.	*From about 100 to 30 volts at 0 input and back to 100 volts at maximum clockwise position.	Proceed to step 7.	Proceed to step 11.
7	878L-1, Triplett 630 Multimeter	Perform calibration procedures described in paragraph 4.2.	Described in referenced procedures.	Module is operating properly. No further tests are required.	If voltage is high, proceed to step 8. If voltage is low, repeat step 5. If no voltage is indicated, disconnect the servo amplifier from the 878L-1, and check continuity of (Cont)

Table 4-3. Troubleshooting Procedures for the Servo Amplifier Module (Cont).

STEP	TEST EQUIPMENT	CONTROL SETTINGS AND INSTRUCTIONS	NORMAL INDICATION	PROCEDURE IF INDICATION IS NORMAL	PROCEDURE IF INDICATION IS ABNORMAL
7 (Cont)					(Cont) P1-N to P1-H and P1-N to P1-F for approximately 60 ohms. If indication is normal, proceed to step 17.
8	Triplett 630 Multimeter	Check continuity from either test point J2 or J3 to junction of C11 and C12. Note Continuity may be checked without disconnecting any components provided that the highest meter reading is used. Meter indications will vary with polarity of meter connection in the circuit.	1400 ohms ±10 percent.	If indication is normal and no voltage was indicated for step 6, check P1-F, P1-H, and P1-J for continuity with mating connector.	Check for open or shorted windings in MR1. Replace if bad. Repeat step 1.
9	878L-1, Triplett 630 Multimeter	Connect the servo amplifier to the 878L-1. Set LEVEL CONTROL FOR TERM. C & D to LOW and INPUT CONTROL to TERM. C or TERM. D. With multimeter, check for voltage from junction of R11 and R12 to ground.	*For servo amplifiers 528-0023-005 and 528-0531-001, read approximately 4 volts. For servo amplifier 543-3461-004, read approximately 28 volts.	If indication is normal and voltage reading for step 6 is still high, proceed to step 10.	If voltage is zero, check continuity from the junction of R11 and R12 to terminal L of the mating connector. If voltage is too high or too low, turn POWER switch to OFF. Remove the servo amplifier from the (Cont)

Table 4-3. Troubleshooting Procedures for the Servo Amplifier Module (Cont)

STEP	TEST EQUIPMENT	CONTROL SETTINGS AND INSTRUCTIONS	NORMAL INDICATION	PROCEDURE IF INDICATION IS NORMAL	PROCEDURE IF INDICATION IS ABNORMAL
9 (Cont)					(Cont) 878L-1, and check the resistance from the junction of R11 and R12 to signal ground. If resistance is abnormal, check R11 and R12 separately. If the resistors are normal, proceed to step 17.
10	878L-1, Tektronix 541 Oscilloscope, Triplett 630 Multimeter	Set INPUT CONTROL to BALANCE. Check the voltage at the emitter of Q5.	0 volt.	Meter voltage should be normal.	If the voltage is not zero, use the Tektronix 541 to check for noise voltages in the amplifier stages preceding Q5.
11	878L-1, Tektronix 541 Oscilloscope, Triplett 630 Multimeter	Set INPUT CONTROL to TERM. B. Check signal output at Q3 collector with Tektronix 541.	400-Hz sine wave.	Proceed to step 12.	Remove the servo amplifier from the 878L-1. Check continuity from Q3 collector to signal ground. If shorted, check C7 and CR3. Also check B+ voltage for approximately 70 volts. If all are normal, replace Q3. If B+ is abnormal, proceed to step 17.

Table 4-3. Troubleshooting Procedures for the Servo Amplifier Module (Cont).

STEP	TEST EQUIPMENT	CONTROL SETTINGS AND INSTRUCTIONS	NORMAL INDICATION	PROCEDURE IF INDICATION IS NORMAL	PROCEDURE IF INDICATION IS ABNORMAL
12	878L-1, Triplett 630 Multimeter, Tektronix 541 Oscilloscope	Check signal at the junction of R10 and C8 with Tektronix 541.	400-Hz sine wave.	Proceed to step 13.	Using the multimeter, check the dc base voltage of Q4 for approximately 15 volts. Check R10 and C8. If all are normal, replace Q4.
13	878L-1, Triplett 630 Multimeter, Tektronix 541 Oscilloscope	Check signal at the junction of R15 and the base of Q5 with Tektronix 541.	400-Hz sine wave.	Proceed to step 14.	Check C8. Replace if bad.
14	878L-1, Triplett 630 Multimeter, Tektronix 541 Oscilloscope	Check signal at the junction of R16 and emitter of Q5 with Tektronix 541.	400-Hz sine wave.	Proceed to step 15.	Check R16 and C10. If R16 is normal, check continuity from the junction of R16 and the variable arm of R17 to ground. Check resistance with meter leads connected in both polarities due to Q6 interaction. Minimum resistance should be 200 ohms, and maximum resistance should be (Cont)

Table 4-3. Troubleshooting Procedures for the Servo Amplifier Module (Cont).

STEP	TEST EQUIPMENT	CONTROL SETTINGS AND INSTRUCTIONS	NORMAL INDICATION	PROCEDURE IF INDICATION IS NORMAL	PROCEDURE IF INDICATION IS ABNORMAL
14 (Cont)					(Cont) 2000 on the X100,000 scale. If the preceding checks are normal, check R17, T1, and Q6 resistance to base. Note If either Q5 or Q6 is replaced, perform calibration procedures in paragraph 4.2.
15	878L-1, Triplett 630 Multimeter	Check the dc voltage from J3 to Q6 collector and from J2 to Q6 collector.	*No signal indications: approximately 6.0 volts. Full signal indications: over 25 volts on one side, zero on the other side.	Proceed to step 16.	If voltage is low across both halves of the circuit, replace Q6 and perform the calibration procedures, paragraph 4.2.
16	878L-1, Triplett 630 Multimeter	Check ac voltage from terminals 1 and 3 of T1 to ground.	75 volts ac.	Proceed to step 17.	Check 115-volt, 400-Hz power input at P1-M.
17	Triplett 630 Multimeter	Turn POWER switch to OFF. Remove servo amplifier from the 878L-1. Check CR6, CR7, (Cont)		Repeat steps 6 and 7.	Replace defective component. Proceed to step 18.

Table 4-3. Troubleshooting Procedures for the Servo Amplifier Module (Cont).

STEP	TEST EQUIPMENT	CONTROL SETTINGS AND INSTRUCTIONS	NORMAL INDICATION	PROCEDURE IF INDICATION IS NORMAL	PROCEDURE IF INDICATION IS ABNORMAL
17 (Cont)		(Cont) C11, and C12. Then check R19 and R20.			
18	878L-1, Triplett 630 Multimeter	Connect servo amplifier to test set. Turn POWER switch to ON. Check B+ at junction of R7 and R8.	*Approximately +70 volts dc.	B+ supply is normal	Check 115-volt, 400-Hz input to T1. If normal, proceed to step 19.
19	878L-1, Triplett 630 Multimeter	Check ac voltage from terminals 1 and 3 of T1 to ground.	*Approximately 75 volts ac from either terminal to ground.	Proceed to step 20.	Check T1 for continuity, and replace any defective components.
20	878L-1, Triplett 630 Multimeter	Check dc voltage from junction of CR4 and CR5 to ground.	+75 to +85 volts dc.	Proceed to step 21.	Check forward and reverse resistance of CR4 and CR5. Check C9 and R18. Replace any defective components. Repeat step 17.
21	878L-1, Triplett 630 Multimeter	Check G1 for audible buzzing.	Buzzing.	Proceed to step 22.	Check voltage from pin 3 of G1 to ground. Voltage should be between 6.0 and 9.0 volts ac. If the voltage is normal, check G1. If the voltage is abnormal, check R1, C2, and the 115-volt, 400-Hz input (Cont)

Table 4-3. Troubleshooting Procedures for the Servo Amplifier Module (Cont)

STEP	TEST EQUIPMENT	CONTROL SETTINGS AND INSTRUCTIONS	NORMAL INDICATION	PROCEDURE IF INDICATION IS NORMAL	PROCEDURE IF INDICATION IS ABNORMAL
21 (Cont)					(Cont) to P1-N. If the voltage is high, check dc resistance of G1. If the above procedures are not effective, replace G1.
22	Triplett 630 Multimeter	Turn the POWER switch to OFF. Remove the servo amplifier from the 878L-1. Measure the resistance from the junction of C13 and C3 to signal ground.	Open.	Unit is operating properly.	Check for continuity from P1-C to G1-1 and from P1-D to G1-6.
*Firm data will be available in next revision.					

4.8.4 Troubleshooting Procedures for the Relay Control Module (Refer to figure 6-4.)

Table 4-4 is provided to assist in troubleshooting the relay control module (using the 878L-2 Relay Control Test Set) by showing normal indications at each step of the FUNCTION CHECK switch, and listing possible malfunctions and their remedies.

4.8.4.1 K5 Pull-in and Dropout Resistors

If the pull-in and dropout voltages of K5 are not within their proper range, the following procedure for selecting correct value resistors is provided.

a. Turn the FUNCTION CHECK switch to position 6. (Turn switch clockwise only.)
b. Set both RESISTOR SELECTOR OHMS switches to their highest value in their respective PULL IN and DROP OUT SHUNT CIRCUIT ranges.
c. Remove R3 from the module and replace with a shorting wire.
d. Lift R8 from K5-2 and connect J1 and J2 of the test set to K5-2 and -7 on the module.
e. Plug in module.
f. Turn POWER switch to ON.
g. Set the RELAY TEST VOLTAGE CONTROL to the proper pull-in range (53 to 57 volts).

h. Rotate the PULL-IN SHUNT CIRCUIT resistor switch a step at a time until K5 pulls in (upper 5 and 23 indicators go out). Resistance indicated by PULL-IN SHUNT CIRCUIT resistor switch is the correct value for R3. Indicators 2, 11, 16, 18, 19, 27, 33, 34, 37, 39, and 50 should match.
i. Turn POWER switch to OFF.
j. Remove the shorting wire from R3 terminals.
k. Turn POWER switch to ON.
l. Set the RELAY TEST VOLTAGE CONTROL to 80 volts.
m. Adjust the RELAY TEST VOLTAGE CONTROL and set the DROP-OUT SHUNT CIRCUIT resistor switch so that dropout on K5 (upper indicators 5 and 23 light) occurs at 3 to 7 volts below pull-in voltage. The resistance indicated by the DROP-OUT SHUNT CIRCUIT resistor switch is the correct value for R8.
n. Install resistors of correct value for R3 and R8, and check for proper pull-in and dropout ranges.

4.8.4.2 K4 Pull-in and Dropout Resistors

This procedure is for selecting the correct value of pull-in and dropout resistors for K4.

a. Turn the FUNCTION CHECK switch to position 7 (turn the switch clockwise only).
b. Set both RESISTOR SELECTOR OHMS switches to their highest value in their respective PULL IN or DROP OUT SHUNT CIRCUIT ranges.
c. Remove R2 from the module and replace with a shorting wire.
d. Lift R7 from K4-2, and connect J1 and J2 of the test set to K4-2 and -7 on the module.
e. Plug in module.
f. Turn POWER switch to ON.
g. Set the RELAY TEST VOLTAGE CONTROL to the proper pull-in range (68 to 72 volts).
h. Rotate the PULL-IN SHUNT CIRCUIT resistor switch a step at a time until K4 pulls in (upper indicator 13 goes out). Resistance indicated by the PULL-IN SHUNT CIRCUIT resistor switch is the correct value for R2. Indicators 2, 11, 16, 17, 18, 19, 23, 33, 34, 37, 39, and 50 should match.
i. Turn POWER switch to OFF.
j. Remove the shorting wire from R2 terminals.
k. Turn POWER switch to ON.
l. Set the RELAY TEST VOLTAGE CONTROL to 80 volts.
m. Adjust the RELAY TEST VOLTAGE CONTROL and set the DROP-OUT SHUNT CIRCUIT resistor switch so that dropout on K4 (upper indicator 13 lights) occurs 3 to 7 volts below pull-in voltage.
n. Install correct value resistors for R2 and R7 and check pull-in and dropout voltage ranges.

Table 4-4. Troubleshooting Procedures for the Relay Control Module.

STEP	PROCEDURE	NORMAL INDICATION	ABNORMAL INDICATION	PROBABLE CAUSE	REMEDY
1	Set FUNCTION CHECK switch to START (rotate switch clockwise only).				

Table 4-4. Troubleshooting Procedures for the Relay Control Module (Cont).

STEP	PROCEDURE	NORMAL INDICATION	ABNORMAL INDICATION	PROBABLE CAUSE	REMEDY
2	Rotate RELAY TEST VOLTAGE CONTROL completely counter-clockwise.				
3	Set RESISTOR SELECTOR OHMS switches to OFF.				
4	Set MODULE SELECTION switch to 528-0154-005.				
5	Set CONTROL GROUND switch to PULSE.				
6	Plug in module to be tested, and set POWER switch to ON.				
7	Rotate FUNCTION CHECK switch to position 2. Proceed to step 8 when all normal indications have been obtained.	Indicators 16 are matched (both upper and lower indicators lit).	Upper lamp 16 out. Lower lamp 16 out. Upper lamps 39 and 50 lit.	K7 contacts 3 and/or 4 damaged. K7 remains energized. K7 contacts 13 and 14 damaged.	Replace K7.
8	Rotate FUNCTION CHECK switch to position 3. Proceed to step 9 when all normal indications have been obtained.	Dc voltmeter indicates +26 to +29 volts. Indicators 39 and 50 should match. Ignore remaining indicators.	No dc voltmeter indication. Upper lamps 39 and 50 out.	K7 energizing coil open.	Replace K7.
9	Rotate FUNCTION CHECK switch to position 4.	Module switches to home position, if not already in home position.	Module is not in home position.	Motor B1 damaged.	Replace motor B1.

Table 4-4. Troubleshooting Procedures for the Relay Control Module (Cont).

STEP	PROCEDURE	NORMAL INDICATION	ABNORMAL INDICATION	PROBABLE CAUSE	REMEDY
9 (Cont)	Proceed to step 10 when all normal indications have been obtained.	Indicators 2, 8, 11, 13, 16, 18, 19, 23, 33, 34, 37, 39, and 50 should match.		K1 energizing coil damaged. K1 contacts 1 and/or 2 damaged.	Replace K1.
10	Rotate FUNCTION CHECK switch to position 5. Proceed to step 11 when all normal indications have been obtained.	Pointer on meter M1 is within LINE CHECK portion of meter scale. Indicators 2, 5, 16, 18, 19, 23, 27, 33, 34, 37, 39, and 50 should match.	Meter pointer is not within LINE CHECK portion of meter scale.	Improper input voltage to test set.	Adjust test set input voltage to obtain proper meter indication.
11	Rotate FUNCTION CHECK switch to position 6. Rotate test VOLTAGE CONTROL clockwise until upper indicators 5 and 23 go out. Record meter indication. Note Lower indicators 5 and 23 do not light. Proceed to step 12 when all normal indications have been obtained.	Meter indication between 53 and 57 volts. Indicators 5 and 23 go out. Indicators 2, 11, 16, 18, 19, 27, 33, 34, 37, 39, and 50 should match.	Meter indicates above 57 volts or below 53 volts. Indicators 5 and 23 remain lit. Indicator 5 remains lit. Indicator 23 remains lit.	Improper value for resistor R3. K5 energizing coil open. K5 contacts 10 and/or 11 damaged. K5 contacts 12 and/or 13. K5 energizing circuit.	Refer to paragraph 4.8.4.1. Replace K5. Replace K5. Replace K5, R3, R8, C2. Replace faulty component R3, R8, C2, or C7.

Table 4-4. Troubleshooting Procedures for the Relay Control Module (Cont).

STEP	PROCEDURE	NORMAL INDICATION	ABNORMAL INDICATION	PROBABLE CAUSE	REMEDY
12	For module 528-0154-005, rotate RELAY TEST VOLTAGE CONTROL clockwise until M1 indicates 80 volts, then rotate RELAY TEST VOLTAGE CONTROL counterclockwise until upper indicators 5 and 23 are lit. Rotate RELAY TEST VOLTAGE CONTROL completely counterclockwise, and proceed to step 13 when all normal indications have been obtained.	Difference between meter indication for step 11 and meter indication for step 12 is not more than 5 ±2 volts. Indicates 2, 11, 16, 18, 19, 27, 33, 34, 37, 39, and 50 should match.	Difference between meter indication for step 11 and meter indication for step 12 is more than 5 ±2 volts. Upper indicator 5 does not light.	Improper value for R8. K5 remains energized.	Refer to paragraph 4.8.4.1. Replace faulty component in K5 energizing circuit R3, R8, C2, or C7. Replace K5.
13	Rotate FUNCTION CHECK switch to position 7. Rotate RELAY TEST VOLTAGE CONTROL clockwise until upper lamp 13 is no longer lit. Record meter indication. Note Lower indicator 13 does not light. Proceed to step 14 when all normal indications have been obtained.	Meter indicates between 68 and 72 volts. Indicators 2, 11, 16, 17, 18, 19, 23, 33, 34, 37, 39, and 50 should match.	Meter indication above 72 or below 68 volts. Upper indicator 13 remains lit.	Improper value for resistor R2. K4 energizing coil open. K4 contacts 12 and/or 13 damaged. K4 energizing circuit open.	Refer to paragraph 4.8.4.2. Replace K4. Replace faulty component CR5, C1, R2, or R7.
14	For module 528-0154-005, rotate RELAY TEST VOLTAGE CONTROL clockwise until M1 indicates 80 volts, then turn (Cont)	Difference between meter indication for step 13 and meter indication for (Cont)	Difference between meter indication for step 13 and meter indication for (Cont)	Resistor R7.	Refer to paragraph 4.8.4.2.

Table 4-4. Troubleshooting Procedures for the Relay Control Module (Cont).

STEP	PROCEDURE	NORMAL INDICATION	ABNORMAL INDICATION	PROBABLE CAUSE	REMEDY
14 (Cont)	(Cont) counterclockwise until upper indicator 13 lights.	(Cont) step 14 is not more than 5 ±2 volts.	(Cont) step 14 is more than 5 ±2 volts.		
	Rotate RELAY TEST VOLTAGE CONTROL completely counter-clockwise, and proceed to step 15 when normal indications have been obtained.	Indicators 2, 11, 16, 17, 18, 19, 23, 33, 34, 37, 39, and 50 should match.	Upper indicator 13 does not light.	K4 contacts 12 and/or 13 damaged.	Replace K4.
			Upper indicator 13 does not light.	K4 energizing circuit.	Replace faulty component C1, R2 or R7.
15	Rotate FUNCTION CHECK switch to position 8.	Module switches from home position to standby position.	Module does not switch.	K5 contacts 9 and/or 10 damaged.	Replace K5.
	Proceed to step 16 when all normal indications have been obtained.	Indicators 7, 8, 11, 13, 18, 23, 33, 38, 43, 45, and 50 should match.		Contacts 1 and 6 on switch S1.	Inspect switch contacts. Clean, repair or replace switch as required.
				Motor B1 damaged.	Replace motor B1.
				K1 energizing coil damaged.	Replace K1.
				K1 contacts 1 and/or 2 damaged.	Replace K1.
16	Rotate FUNCTION CHECK switch to position 9.	Module switches to standby position.	Module does not switch.	Contacts 2 and 6 on switch S1.	Inspect switch contacts. Clean, (Cont)

Table 4-4. Troubleshooting Procedures for the Relay Control Module (Cont).

STEP	PROCEDURE	NORMAL INDICATION	ABNORMAL INDICATION	PROBABLE CAUSE	REMEDY
16 (Cont)					(Cont) repair, or replace switch as required.
	Proceed to step 17 when all normal indications have been obtained.	Indicators 1, 7, 16, 17, 18, 23, 33, 38, 39, 42, 43, 44, 45, and 50 should match.		K9 contacts 8 and/or 14 damaged.	Replace K9.
17	Rotate FUNCTION CHECK switch to position 10.	Indicators 1, 5, 7, 16, 18, 27, 37, 38, 39, 42, 43, 44, 45, and 50 matched.	Upper indicator 5 out.	K5 contacts 10 and 11 damaged.	Replace K5.
	Proceed to step 18 when all normal indications have been obtained.			Contacts 3 and 6 on switch S1.	Inspect switch contacts. Clean, repair, or replace switches as required.
18	Rotate FUNCTION CHECK switch to position 11.	Indicators 1, 7, 8, 16, 18, 33, 38, 39, 42, 43, 44, and 50 should match.	Upper indicators 43 and 44 out.	Contacts 9 and 10 on S5.	Replace S5.
19	Rotate FUNCTION CHECK switch to position 12.	Module switches from rf on position to tune position.	Module does not switch.	K4 contacts 10 and/or 11.	Replace K4.
	Proceed to step 20 when all normal indications have been obtained.	Indicators 1, 7, 16, 18, 23, 33, 38, 39, 42, 43, 46, and 50 should match.		Contacts 3 and 6 on switch S1.	Inspect switch contacts. Clean, repair, or replace switch as required.

Table 4-4. Troubleshooting Procedures for the Relay Control Module (Cont).

STEP	PROCEDURE	NORMAL INDICATION	ABNORMAL INDICATION	PROBABLE CAUSE	REMEDY
20	Rotate FUNCTION CHECK switch to position 13. Momentarily press TIME DELAY TEST switch. Proceed to step 21 when all normal indications have been obtained.	Module switches from tune position to operate position after approximately 13 seconds. After module switches, indicators 1, 6, 7, 16, 18, 23, 27, 33, 38, 39, 42, 45, and 50 matched.	Module does not switch.	Time delay relay K8 malfunctions. Contacts 4 and 6 on switch S1.	Replace K8. Inspect switch contacts. Clean, repair, or replace switch as required.
21	Rotate FUNCTION CHECK switch to position 14. Proceed to step 22 when all normal indications have been obtained.	Indicators 1, 2, 5, 7, 16, 18, 23, 33, 38, 39, 45, and 50 should match.	Upper indicator 6 remains lit.	K1 contacts 6 and/or 8 damaged.	Replace K1.
22	Rotate FUNCTION CHECK switch to position 15. Proceed to step 23 when all normal indications have been obtained.	Module switches from operate to home position. Indicators 2, 16, 17, 18, 19, 23, 33, 34, 37, 39, and 50 should match.	Module does not switch.	CR11 open. Contacts 7 and 8 on switch S2.	Replace CR11. Inspect switch contacts. Clean, repair, or replace switch as required.
23	Rotate FUNCTION CHECK switch to position 16. Proceed to step 24 when all normal indications have been obtained.	Module switches from home to rf on position. Indicators 1, 7, 16, 18, 23, 33, 38, 39, 42, 43, 44, 45, (Cont)	Module does not switch.	Contacts 3, 6, 7, 8, 9, 10, 11, and 12 on switch S1.	Inspect switch contacts. Clean, repair, or replace switch as required.

Table 4-4. Troubleshooting Procedures for the Relay Control Module (Cont)

STEP	PROCEDURE	NORMAL INDICATION	ABNORMAL INDICATION	PROBABLE CAUSE	REMEDY
23 (Cont)		(Cont) and 50 match before module switches to fault. Module switches from rf on to fault after a 75- to 135-second time delay. Indicators 7, 16, 18, 23, 33, 39, 45, and 50 match after module switches to fault. Note Upper light 18 goes out approximately 6 seconds after module switches to fault.			
24	Rotate FUNCTION CHECK switch to position 17. When all normal indications have been obtained, test is complete.	Module switches from fault to home. Indicators 2, 16, 18, 19, 23, 33, 34, 37, 39, and 50 should match.	Module does not switch.	Contacts 7 and 8 on switch S2.	Inspect switch contacts. Clean, repair, or replace switch as required.

4.8.5 Troubleshooting Procedures for the Loading-Phasing Discriminator

Troubleshooting procedures and/or alignment of the loading-phasing discriminator, using the 878L-3 Discriminator Test Set, are shown in table 4-5. In addition to the 878L-3, an rf power source, a vtvm, and a probe-T-connector are required (see table 4-1). The rf power source must be capable of supplying at least 100 watts of power, with a frequency variation of from 2 to 30 MHz.

Table 4-5. Troubleshooting Procedures for the Discriminator Module.

STEP	PROCEDURE	NORMAL INDICATION	ABNORMAL INDICATION	PROBABLE CAUSE	REMEDY
1	Mount the module on the 878L-3 test set, and connect the test set pendant coaxial cable to J2 on the discriminator module. Note Dust cover must be removed before pendant cable can be connected to J2. Module holddown screws must be tightened to ensure proper grounding of the module under test.				
2	Remove dust cover from module, and connect output of rf source to J1 on the discriminator module.				
3	Set SENSITIVITY and METER INDICATION controls to POWER positions. Key the transmitter.				
4	Adjust rf input power for 100 watts (0.4 on M1) at 29.999 MHz. Unkey the transmitter.				

Table 4-5. Troubleshooting Procedures for the Discriminator Module (Cont).

STEP	PROCEDURE	NORMAL INDICATION	ABNORMAL INDICATION	PROBABLE CAUSE	REMEDY
5	Remove the test set pendant cable from the discriminator module, and set the METER INDICATION control to PHASING. Note Unkey the transmitter after each meter reading. No further instructions will be given to do so.	M1 indication of -0.1.	M1 indication other than -0.1.	R8 needs adjustment.	Adjust R8 for M1 indication of -0.1.
5a	Set the SENSITIVITY and METER INDICATION controls to POWER positions, and connect the test set pendant cable connector to J2 on the discriminator module. Key the transmitter.				
5b	Adjust rf input power for 100 watts at 8 MHz as indicated by M1.				
6	Set the METER INDICATION control to LOADING.	M1 indication of 0.	M1 indication other than 0.	C6 needs adjustment.	Adjust C6 for M1 indication of 0.
7	Set the SENSITIVITY and METER INDICATION controls to POWER positions, and connect the test set pendant cable connector to J2 on the discriminator module. Key the transmitter.				

Table 4-5. Troubleshooting Procedures for the Discriminator Module (Cont).

STEP	PROCEDURE	NORMAL INDICATION	ABNORMAL INDICATION	PROBABLE CAUSE	REMEDY
8	Adjust rf input power for 100 watts at 2 MHz as indicated by M1.				
9	Disconnect the test set pendant cable from the discriminator module. Set METER INDICATION control to UNBALANCE. Key the transmitter.	M1 indication of not less than +1.0 volt.	M1 indication less than +1.0 volt.	L2 open.	Replace L2.
10	Set the METER INDICATION control to PHASING. Key the transmitter and record M1 voltage indication.	M1 indication between -0.3 and +0.3 volt. Note If the voltage reading is not within tolerance, the initial adjustment of R8 (as described in step 5) may be varied for a voltage indication between -50 and -200 mv at 29.999 MHz.	M1 indication not between -0.3 and +0.3 volt.	T2, CR4, and CR5 faulty.	Replace transformer assembly.
11	Set the METER INDICATION control to LOADING. Key the transmitter and record M1 voltage indication.	M1 indication between -0.2 and +0.2 volt.	M1 indication not between -0.2 and +0.2 volt.	T1, CR2, CR3, C5, C6, or C7 faulty.	Replace faulty component. Note The transformer assembly must be replaced if T1 (Cont)

Table 4-5. Troubleshooting Procedures for the Discriminator Module (Cont).

STEP	PROCEDURE	NORMAL INDICATION	ABNORMAL INDICATION	PROBABLE CAUSE	REMEDY
11 (Cont)					(Cont) malfunctions. If CR3 is damaged, both CR2 and CR3 must be replaced.
12	Set the METER INDICATION control to SWR. Key the transmitter and record M1 voltage indication.	M1 indication must not exceed 0.25 volt.	M1 indication more than 0.25 volt.	C4 and CR1 faulty.	Replace C4.
13	Connect the coaxial pendant cable connector to J2 on the discriminator module. Set the SENSITIVITY control to LOADING/SWR position. Leave the METER INDICATION control in SWR position. Algebraically subtract the meter indication obtained in step 12 from the present indication.	The voltage difference between steps 12 and 13 must be not more than 0.1 volt.	Voltage difference more than 0.1 volt.	CR1, CR3, C4, R4, C3, or T1.	Replace faulty component. Note If CR2 is damaged, both CR2 and CR3 must be replaced.
14	Set the METER INDICATION control to LOADING. Key the transmitter. Algebraically subtract the meter indication obtained in step 11 from the present indication.	The voltage difference between steps 11 and 14 must be between -0.1 and -0.3 volt.	Voltage difference not between -0.1 and -0.3 volt.	R1, CR2, C1, R2, R3, C2, L1, or C8.	Replace faulty component. Note If CR2 is damaged, both CR2 and CR3 must be replaced.
15	Set the METER INDICATION control to PHASING and the (Cont)	The voltage difference between (Cont)	Voltage difference not between (Cont)	T2, CR4, CR5, R10, R11, (Cont)	Replace faulty component.

Table 4-5. Troubleshooting Procedures for the Discriminator Module (Cont).

STEP	PROCEDURE	NORMAL INDICATION	ABNORMAL INDICATION	PROBABLE CAUSE	REMEDY
15 (Cont)	(Cont) SENSITIVITY control to 2 MHz. Key the transmitter. Algebraically subtract the meter indication obtained in step 10 from the present indication.	(Cont) steps 10 and 15 must be between -0.08 and -0.4 volt.	(Cont) -0.08 and -0.4 volt.	(Cont) C10, C11, R5, R6, R7, R8, C9, C12, or L2.	Note If either CR4 or CR5 is damaged, both diodes must be replaced.
16	Repeat steps 7, 8, and 10 through 15 for SENSITIVITY control settings of 7 MHz, 14 MHz, 22 MHz, 25 MHz, and 30 MHz. Note The rf input frequency must correspond to the frequency indicated by the setting of the SENSITIVITY control (except 30 MHz where the transmitter should be set at 29.999 MHz).	Refer to steps 7, 8, and 10 through 15.	Refer to steps 7, 8, and 10 through 15.	Refer to steps 7, 8, and 10 through 15.	Refer to steps 7, 8, and 10 through 15.

4.9 BENCH TESTING

4.9.1 General

Bench testing the 180R-6/6A and 309A-2E is recommended for isolating malfunctions and testing the equipment prior to installation. Figure 4-2 is a block diagram showing a bench-test setup using an AN/ARC-58 Receiver/Transmitter. Table 4-6 lists the necessary test equipment to perform the tests. If a 548L-4A Linear Power Amplifier is used for bench testing, figure 6-9 will aid in cable makeup.

It is necessary that a proper bench arrangement be provided for testing. The top of the bench should be completely covered with an aluminum sheet, and all grounds should be made to the sheet. Be certain that all shockmount bonding straps are in place.

Caution

Do not use clips, braid, and similar apparatus for grounds.

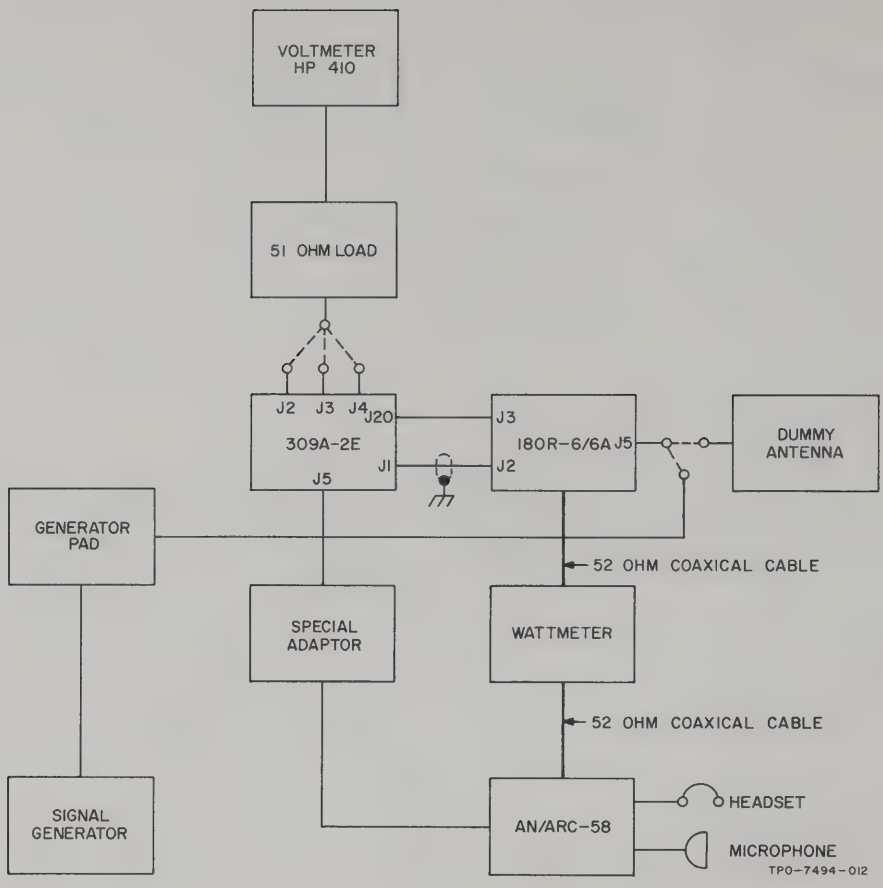


Figure 4-2. Bench-Test Equipment, Block Diagram.

Table 4-6. Test Equipment Required.

EQUIPMENT	RANGE	RECOMMENDED TYPE
Stopwatch	1/5-second steps	Meylan Type 202A
Microphone	Carbon	NAF-213264-6
Ac power source	108 to 121 volts, 3-phase, 380 to 420 Hz, 2500 va minimum	
Headset	200- to 300-ohm impedance	H-1A/R
Multimeter	Volts ohms	Triplett 630
Signal generator	1 to 30 MHz	Measurements 65-B

Table 4-6. Test Equipment Required (Cont).

EQUIPMENT	RANGE	RECOMMENDED TYPE
Generator pad	30 to 3 ohms	Measurements M271
Voltmeter		HP-410
Load	51 ohms	
Receiver/transmitter	2 to 20 MHz	AN/ARC-58
Rf load	51.5 ohms	Bird Model 82A
Interconnecting cables		GRM-10
Wattmeter	0 to 100 watts forward. 0 to 25 watts reflected.	4141S
Adapter junction box		(See figure 4-3.)

4.9.2 Adapter Junction Box

It is recommended that the special adapter junction box be used as shown in figure 4-2. Figure 4-3 is a schematic diagram of the special adapter. The special adapter may be constructed from the parts listed in table 4-7.

4.9.3 Frequencies

The following frequencies should be used when bench testing the 180R-6/6A and the 309A-2E; 2, 3, 4, 7, 11, 14, 17, 22, 25, and 29.999 MHz.

4.9.4 Bench Testing Procedure

a. Remove the 180R-6/6A dust cover.
b. Set up equipment as shown in figure 4-2 (except do not connect the signal generator).
c. Apply ac power to the transmitter and the coupler system.
d. Rechannel the transmitter to 2 MHz. DTIP lamp should light and the coupler system should run to the home position.
e. At completion of homing, the coupler should advance to the coupler hold position and the ADVANCE tune lamp should light.
f. Momentarily key the transmitter; ADVANCE tune lamp should go out.
    1. Coupler control should hold transmitter keyed.
    2. ATIP lamp should light.
    3. Coupler should start its tuning process.
    4. System should complete tuning and the COMPLETE TUNE lamp should come on in no more than 30 seconds after momentary key. ATIP lamp should go out.
    5. Coupler control should release transmitter key when coupler is tuned to the dummy antenna.

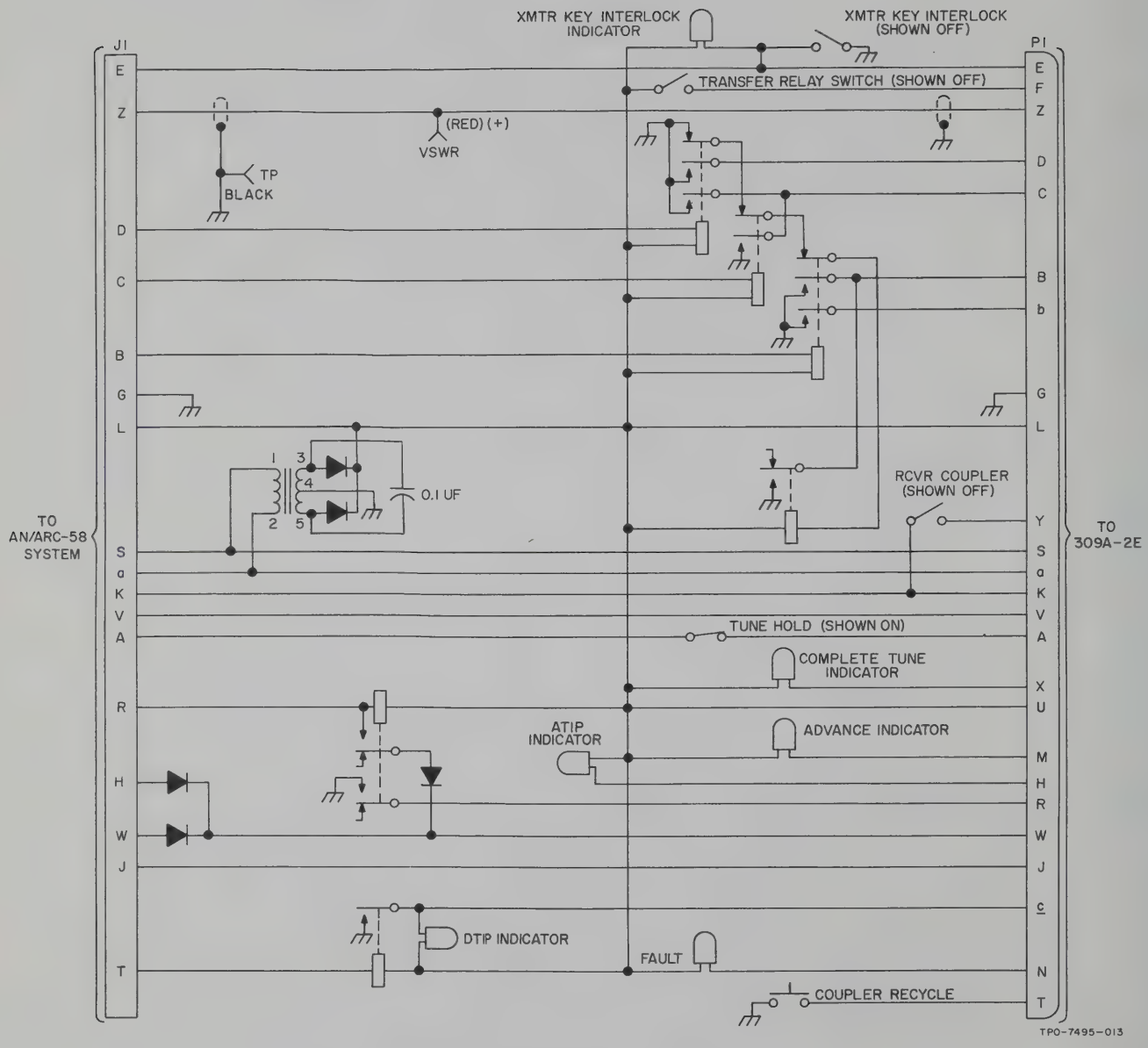


Figure 4-3. Special Adapter, Schematic Diagram

Table 4-7. Special Adapter Parts.

QTY	COLLINS PART NUMBER	MFR PART NUMBER	DESCRIPTION
6	972-1335-00	MG1165-1	4pdt relay
6	262-0375-00	101-3830-9	Indicator lampholder
6	262-1106-00	MS 25237-327-15	Bulb
6	262-0376-00	101-971	Lens, red
5	266-3072-00	ST 42A	Spst switch
1	372-1061-00	DF 30 BC	5-way binding post, black
1	372-1062-00	DF 30 RC	5-way binding post, red
5	353-1775-00	IN 2071	Diode
1	672-1190-00	94-0265-00	Transformer
1	371-1000-00	PB02A-16-26P	Connector
1	371-1266-00	PB06A-16-26-S	Connector
1	951-0107-00	118P10406S1	Capacitor, 0.1 uf

g. Key the transmitter, measure and record the forward and reflected power (no more than 1.7 percent reflected). Unkey the transmitter.
h. Key the transmitter, talk into the microphone, and observe any malfunction or arcing of the equipment. Unkey the transmitter.
i. Momentarily set the XMTR KEY INTERLOCK switch to off; XMTR KEY INTERLOCK lamp should light momentarily.
j. Momentarily set the TRANSFER RELAY switch to on; XMTR KEY INTERLOCK lamp should light momentarily.
k. Depress the COUPLER RECYCLE button momentarily. The coupler system should run to the home position, then advance to the coupler hold position (ADVANCE tune lamp on).
l. Disconnect rf input to the T-605 and key the system. Coupler should advance to rf on position and remain stationary.
m. Momentarily connect rf input to T-605, system should advance to the tune position. Disconnect rf input to T-605, and turn the TUNE HOLD switch off. FAULT lamp should come on in 75 to 135 seconds.
n. Repeat entire procedure for the remaining frequencies listed in paragraph 4.9.3.

4.9.5 Bench Testing the 156G-1 Receiver Coupler

With associated equipment connected as shown in figure 4-2, apply 2 volts rms to J5 of the 180R-6/6A. Output readings from J2, J3, and J4 (309A-2E) for 1.5 MHz, 4 MHz, and 12 MHz should be no less than 0.7 volt, and at 29.999 MHz, should be no less than 0.45 volt.

section 5
parts list

5.1 INTRODUCTION

5.1.1 General

This parts list is a complete list of parts for the equipment manufactured by Collins Radio Company (see figure 5-1).

Periodically the parts list is revised to cover additions, deletions, or changes to the equipment. These revisions are indicated by an R placed to the left of each revised item and apply to the current revision only.

5.1.2 Numerical Index

This index contains an alphanumerical list of all parts listed in the parts list.

a. PART NUMBER Column
In this column are listed part numbers for procurable parts and assemblies in the parts list.

1. Order of Precedence
The order of precedence beginning at the extreme left-hand position in part number numerical arrangement is as follows:

Letters A through Z
Numerals 0 through 9 (Alphabetical O's are considered as numerical zeros.)

The order of precedence in continuing the part number arrangement in second and succeeding positions of the part number from left to right is as follows:

Space (blank column)
Diagonal (slant)/
Point (period).
Dash (-)
Letters A through Z
Numerals 0 through 9 (Alphabetical O's are considered as numerical zeros.)

2. Collins Radio Company Part Numbering System
Collins Radio Company part numbering system is comprised of a three-digit family number, a four-digit serial number, and a two- or three-digit dash number:

FAMILY NO.	SERIAL NO.	DASH NO.
XXX	XXXX	XX or XXX

b. FIG.-ITEM Column
This column lists the parts list figure and item numbers assigned to the associated part numbers.

c. TTL REQ (Total Required) Column
Total quantity of parts or assemblies required at each location is listed in this column.
d. AIRLINE PART NO. Column
Intentionally left blank, for airline use only.

5.1.3 Symbol Index

The symbol index enables the user to locate, by symbol, the part number and the figure and item number of any electrical item that appears on the schematic diagram.

a. SYMBOL Column
This column contains an alphanumerical listing of all symboled items. When the same symbol appears in different units or subassemblies, module symbol prefix designators are used. Where no prefix has been assigned, separate indexes will be given. Prefix designators, if required, will be found in paragraph 5.1.7.
b. FIG.-ITEM Column
The figure and item numbers are used to locate a part in the parts list after it has been located in the symbol index.
c. PART NUMBER Column
This column contains the part number for all symboled items.

5.1.4 Parts List

a. General
The parts list consists of a breakdown of the complete unit into subassemblies and detailed parts. Each assembly is listed in its order of disassembly and is followed immediately by its component parts properly indented to show their relationship to the assembly.
1. FIG.-ITEM Column
Figure and item numbers key the parts breakdown to the applicable illustration. Items in the parts breakdown preceded by a dash (example -1) will not be keyed on the illustration.
2. PART NO. Column
Part numbers listed are MIL part numbers, manufacturer's part numbers, or Collins part numbers. Part numbers for items which are made from raw stock, such as wire, solder, varnish, lacing cord, etc. are not listed.
3. INDENT. Column
Indention is shown by codes indicating item relationship.
4. NOMENCLATURE Column
This column contains a description for each item listed. Reference to the next higher (NHA) is listed as the last item in the nomenclature column. If a part is purchased by Collins Radio Company from a vendor, a Federal Manufacturer's Code number is listed in this column. If this column does not include a Federal Manufacturer's Code Number, the item is either a MIL approved item, commercial item or manufactured by Collins. Where COML appears in this column, the part may be obtained commercially from various vendors. Part numbers appearing in this column are Collins assigned part numbers for that item. Proprietary items are so indicated by the letter P. Serial numbers or MCN (manufacturing control number) effectivities, where applicable, are listed in this column. Serial number effectivities are designated on the nameplate. The MCN is stamped on each module and/or chassis. Changes made from service bulletins are so indicated by SB1, SB2, etc.

5. UNITS PER ASSY. Column
This column contains the number of parts required for each assembly or subassembly. The letters AR denote that the selection of a part or parts should be made as required. REF refers to an assembly which is completely assembled on a preceding illustration.
6. USAGE CODE Column
Part variations within different models of the same equipment are indicated in the usage code column. In cases where this column has been left blank, the part listed will apply to all models of equipment covered by this publication. If usage codes are required, see paragraph 5.1.6.

5.1.5 Manufacturer's Code and Name Index

CODE	MANUFACTURER'S NAME AND ADDRESS
00656	Aerovox Corp. 740 Belleville Ave. New Bedford, Mass. 02741
01121	Allen-Bradley Co. 1201 S. 2nd St. Milwaukee, Wis. 53204
01526	General Electric Co. Specialty Control Dept. P.O. Box 812 Waynesboro, Va. 22980
01939	Sprague Electric Co. of Wisconsin Grafton, Wis. 53024
02660	Amphenol Corp. 2801 S. 25th Ave. Broadview, Ill. 60153
04222	HI-Q Div. of Aerovox Corp. Air Base Myrtle Beach, S.C. 29577
06151	Dialtron Corp. 203 Harrison Place Brooklyn, N.Y. 11237
07387	Birtcher Corp., The 4371 Valley Blvd. Los Angeles, Calif. 90032
08805	General Electric Co. Large Lamp Dept. Nela Park Cleveland, Ohio 44112

CODE	MANUFACTURER'S NAME AND ADDRESS
08664	Bristol Co., The Bristol Plts Mls Waterbury, Conn. 06720
09250	Electro Assemblies, Inc. 4444 North Kedzie Ave. Chicago, Ill. 60625
09922	Burndy Corp. Richards Ave. Norwalk, Conn. 06852
10646	Carborundum Co. Buffalo Ave. Niagara Falls, N.Y. 14302
11707	Ideal Precision Meter Co., Inc 214 Franklin St. Brooklyn, N.Y. 11222
12014	Chicago Rivet and Machine Co. 950 S. 25th Ave. Bellwood, Ill. 60104
12615	U.S. Terminals, Inc. 7504 Camargo Road Cincinnati, Ohio 45243
12998	Quality Name Plate, Inc. Mill Road E. Glastonbury, Conn. 06033
13573	Filters, Inc. 460 E. Brokaw Rd. San Jose, Calif. 95112

CODE	MANUFACTURER'S NAME AND ADDRESS
14655	Cornell-Dubilier Electric Corp. 50 Paris Street Newark, N.J. 07100
19070	Eastern Air Devices, Inc. 385 Central Ave. Dover, N.H. 38022
21242	American Electronics Components Corp. P.O. Box 27087 Cincinnati, Ohio 45200
21585	Farr Co. 2301 E. Rosecrans El Sequndo, Calif. 90245
25140	Globe Industries, Inc. 2275 Stanley Ave. Dayton, Ohio 45404
40920	Miniature Precision Bearings, Inc. West Lebanon Rd. Keene, N.H. 03766
44038	North Electric Co. 553 S. Market St. Galion, Ohio 44833
46384	Penn Engineering and Mfg. Corp. Old Easton Highway Doylestown, Pa. 18901
53021	Sangamo Electric Co. 1301 N. 11th Springfield, Ill. 62705
56289	Sprague Electric Co. Marshall St. North Adams, Mass. 01247
59730	Thomas and Betts Co., The 36 Butler St. Elizabeth, N.J. 07207
71279	Cambridge Thermionic Corp. 430 Concord Ave. Cambridge, Mass. 02138
71468	ITT Cannon Electric, Inc. 3208 Humbolt St. Los Angeles, Calif. 90031
71590	Centralab Div. of Globe-Union, Inc. 932 E. Keefe Ave. Milwaukee, Wis. 53212
71785	Cinch Mfg. Co. and Howard B. Jones Div. 1026 S. Homan Ave. Chicago, Ill. 60624
72259	Nytronics, Inc. 550 Springfield Ave. Berkeley Heights, N.J. 07922
72568	G.M. Laboratories, Inc. 4300 N. Knox Ave. Chicago, Ill. 60641
72825	Eby Hugh H., Inc. 4701 Germantown Ave. Philadelphia, Pa. 19144
72962	Elastic Stop Nut Corp of America 2330 Vauxhall Rd. Union, N.J. 07083
72982	Erie Technological Products, Inc. 644 W. 12th St. Erie, Pa. 16512
73168	Fenwal, Inc. 400 Main St. Ashland, Mass. 01721
73386	Freed Transformer Co., Inc. 1736 Weirfield St. Brooklyn, N.Y. 11227
73905	Jennings Radio Mfg. Corp. 970 McLaughlin Ave. San Jose, Calif. 95108
74048	Meyercord Co. 5327 W. Lake St. Chicago, Ill. 60624

CODE	MANUFACTURER'S NAME AND ADDRESS
74921	Iten Fibre Co., The 5400 Bower Ave. Ashtabula, Ohio 44004
75042	I R C, Inc. 401 N. Broad St. Philadelphia, Pa. 19108
75237	Kaynar Mfg. Co. P.O. Box 3001 Fullerton, Calif. 92634
75543	Lavelle Rubber Co. 424 N. Wood Chicago, Ill. 60622
76005	Lord Mfg. Co. Div. of Lord Corp. 1635 W. 12th Erie, Pa. 16512
76854	Oak Mfg. Co. S. Main Crystal Lake, Ill. 60014
77147	Patton MacGuyer Co. Edgewood Station Providence, R.I. 02905
77250	Pheoll Mfg. Co. Chicago, Ill. 60600
77820	Bendix Corp., The Electrical Components Div. Sherman Ave. Sidney, N.Y. 13838
78189	Shakeproof Div. of Illinois Tool Works, Inc. St. Charles Road Elgin, Ill. 60120
78277	Sigma Instruments, Inc. 170 Pearl St. South Braintree, Mass. 02185
79136	Waldes Kohinoor, Inc. 47-16 Austel Place Long Island City, N.Y. 11101
80368	Sylvania Electric Products, Inc. 730 Third Ave. New York, N.Y. 10017
81312	Winchester Electronics Div. Litton Industries, Inc. Main Street and Hillside Ave. Oakville, Conn. 06779
81541	Airpax Electronics, Inc. Woods Rd. Cambridge, Md. 21613
81804	Mica Insulator Co. Schenectady, N.Y. 12300
81860	Barry Controls Div. of Barry Wright Corp. 700 Plsnt Watertown, Mass. 02172
82142	Jeffers Electronics Div. of Speer Carbon Co. DuBois, Pa. 15801
82219	Sylvania Electric Products, Inc. Electronic Tube Div. Receiving Tube Operations Emporium, Pa. 15834
82877	Rotron Mfg. Co., Inc. 7-9 Hasbrouck Lane Woodstock, N.Y. 12498
83086	New Hampshire Ball Bearings, Inc. Peterborough, N.H. 03458
88818	Kearfott Div. of General Precision, Inc. 1150 McBride Little Falls, N.J. 07424
89185	Aeronautical Radio, Inc. 1700 K N.W. Washington, D.C. 20006
90634	Gulton Industries, Inc. 212 Durham Ave. Metuchen, N.J. 08840

CODE	MANUFACTURER'S NAME AND ADDRESS
91314	Lewis Spring and Mfg. Co. 2652 W. North Ave. Chicago, Ill. 60647
91637	Dale Electronics, Inc. P.O. Box 609 Columbus, Nebr. 68601
91663	Armel Electronics, Inc. 1601 75th St. North Bergen, N.J. 07047
92054	Radio Cores, Inc. 5757 W. 95th St. Oak Lawn, Ill. 60453
92825	Whitso, Inc. 9330 Byron St. Schiller Park, Ill. 60176
93929	G-V Controls, Inc. 81 Okner Parkway Livingston, N.J. 07039
94084	Handy and Harman 1900 Estes Elk Grove Village, Ill. 60007
94375	Automatic Metal Products Corp. 315-323 Berry St. Brooklyn, N.Y. 11211
95105	Collins Radio Co. Information and Service Center 19700 Jamboree Rd. P.O. Box C Newport Beach, Calif. 92660
95238	Continental Connector Corp. 34-63 56th St. Woodside, N.Y. 11377
95354	Methode Mfg. Corp. 1700 S. Hicks Rd. Rolling Meadows, Ill. 60008
97965	Essex Wire Corp. Electronic Marketing Div. 3501 W. Addison St. Chicago, Ill. 60618
98278	Microdot, Inc. 220 Pasadena Ave. South Pasadena, Calif. 91030
98291	Sealectro Corp. 225 Hoyt Mamaroneck, N.Y. 10544
98978	International Electronic Research Corp. 151 W. Magnolia Ave. Burbank, Calif. 91502
99378	Atlee Corp. 2 Lowell Ave. Winchester, Mass. 01890
99699	Filtors, Inc. Div. of the Deutsch Co. Electronics Components Div. 65 Daly Road East Northport, N.Y. 11731
99800	Delevan Electronics Corp. 270 Quaker Rd. East Aurora, N.Y. 14052

5.1.6 Usage Code

The following codes have been assigned in this manual:

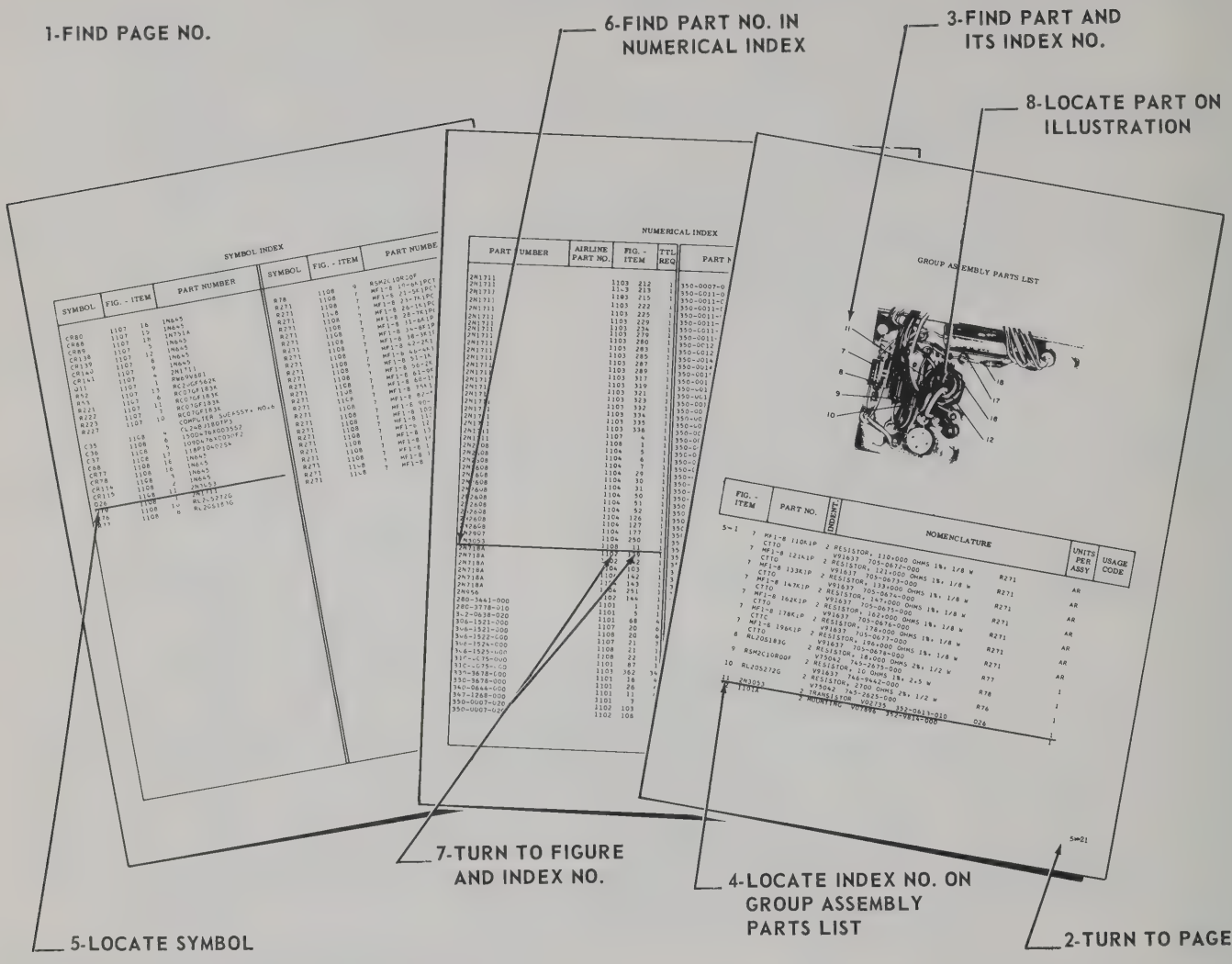
USAGE CODE	UNIT	FIGURE
A	DC Servoamplifier	5-7
B	Electronic Control Amplifier	5-7
C1	Case Assy	5-12
C2	Case Assy	5-12

5.1.7 Reference Designation Prefixes

The following prefixes have been assigned in this manual:

PREFIX	UNIT	FIGURE
1	180R-6 Antenna Coupler	5-11
1	180R-6A Antenna Coupler	5-2
1A1	Loading Discriminator	5-3
2	Coupler Control Chassis	5-5
2A1, 2A2, 2A3	Isolation Multicoupler	5-8
2A4, 2A5	DC Servoamplifier	5-7
2A4, 2A5	Electronic Control Amplifier	5-7
2A4, 2A5	Electronic Control Amplifier	5-7A
2A6	Relay Assembly Group	5-6

How to Use This Illustrated Parts List



HOW TO FIND THE PART NUMBER IF THE SECTION OR SYSTEM OF THE EQUIPMENT IN WHICH THE PART IS USED IS KNOWN:

(1) Turn to the List of Illustrations and find the page number for the Major Assembly or System in which the part is used.

(2) Turn to the page determined in step (1).

(3) Locate the part and its index number on the illustration.

(4) Find the index number on the Group Assembly Parts List page to determine complete description.

(5) If the reference designation symbol is known, refer to the Symbol Index to find the part number.

HOW TO FIND THE ILLUSTRATION FOR A PART IF THE PART NUMBER IS KNOWN:

(6) Refer to the Numerical Index and find the part number.

(7) Turn to the Group Assembly Parts List and find the first figure and index number indicated in the Numerical Index for that part. If this figure shows the part in a section or system of the equipment other than the one desired, refer to the other figure numbers listed in the Numerical Index.

(8) On the face of the illustration, find the index number determined in step (7).

5.2 NUMERICAL INDEX

PART NUMBER	FIG. - ITEM		TTL REQ	AIRLINE PART NO.
AB397-1A	5-7B	34	1	
AN5004-7	5-2	83	6	
ARC20GF512J	5-7	&49	AR	
A0-14599A	5-5	10	1	
A0-15497-2	5-2	104	1	
A0-15497-2	5-14	103	1	
A10001	5-2	3	1	
A10001	5-12	3	1	
BS217	5-8	27	1	
B22BC3-0	5-10	4	8	
CK13AX472M	5-7B	13	1	
CK14AX103M	5-3	11	5	
CK14AX103M	5-3	15	3	
CK14AX103M	5-5	80	9	
CK14AX103M	5-7	50A	1	
CK14AX103M	5-7A	24	1	
CK14AX103M	5-7A	24A	1	
CK14AX103M	5-8	35	1	
CK14AX103M	5-8	35A	1	
CK63AW103M	5-5	54A	2	
CL21CH180TP3	5-7	31	1	
CL21CH4R5TP3	5-7	10	1	
CL21CH4R5TP3	5-7B	43	1	
CL21CJ030TP3	5-7	25	1	
CL21CJ030TP3	5-7B	31	1	
CL21CK080TP3	5-7	33	1	
CL21CK080TP3	5-7B	35	1	
CL23CH2R5TN3	5-7	15	1	
CL23CH2R5TN3	5-7	15A	1	
CL23CH2R5TN3	5-7	15B	1	
CL23CH2R5TN3	5-7B	14	1	
CL23CH2R5TN3	5-7B	18	1	
CL23CH2R5TN3	5-7B	45	1	
CL23CN0R5SN3	5-7	26	1	
CL23CN0R5SN3	5-7	26A	1	
CL24BQ130SP3	5-8	15	1	
CL24BQ250SP3	5-8	14	1	
CL25BN080SP3	5-6	27	2	
CL31CN0R5MP3	5-7B	1	1	
CL31CN0R5MP3	5-7B	28	1	
CL33CH0R8MN3	5-7	40	1	
CL33CH0R8MN3	5-7B	37	1	
CL37BD160MN3	5-5	100	1	
CL440-1C	5-7	4E	3	
CL440-1C	5-7	48B	2	
CL440-1C	5-7	60B	2	
CL440-1C	5-7	61B	2	
CL440-1C	5-7A	10	2	
CL632-2C	5-15	208	3	
CT10-103K	5-7B	7	1	
CT10-103K	5-7B	19	1	
CV11C450	5-3	33	1	
DAH15P0021A158	5-5	64	1	
DA049-123B	5-7	14	1	
DA049-123B	5-7	14	1	
DA049-123B	5-7	50	1	
DCH2HV805-20	5-15	18	1	
DD50P	5-6	83	1	
DM0073	5-3	9	2	
DM0073	5-3	14	1	

PART NUMBER	FIG. - ITEM		TTL REQ	AIRLINE PART NO.
DM0073	5-5	81	2	
DM0073	5-7	32	1	
DM0073	5-8	29	1	
DP439-433WHT	5-7B	51	33	
ES2816-2	5-2	80	12	
FR120SN0-115	5-6	72	1	
F22NCFMA1-40	5-7B	49	7	
GT2839	5-6	4	1	
G2666	5-7	43	1	
G2666	5-7A	8	1	
G3249	5-7	44	1	
G3249	5-7A	7	1	
HM4721	5-7A	23	1	
HPA42N470-231K	5-2	256K	1	
HP4N	5-2	249	1	
HP4N	5-11	8	1	
HP8N	5-5	96	1	
HTS17-3000Z	5-2	73	6	
HTS17-3000Z	5-8	34	1	
HTS17-3000Z	5-13	38	1	
HTS17-3000Z	5-13	39	1	
HTS17-3000Z	5-13	40	1	
HTS17-3000Z	5-13	41	1	
HTS17-3000Z	5-13	42	1	
HTS17-3000Z	5-13	43	1	
J6677-2	5-9	21	1	
J6677-3	5-9	19	2	
J6677-8	5-9	20	2	
K1913-08	5-2	26	4	
K1913-08	5-12	41	4	
K7000-06-6	5-2	28	6	
K7000-06-6	5-12	45	6	
LT4K036	5-8	32	1	
LT4K036	5-8	32A	1	
MD612S	5-7A	12	1	
MM7-22P	5-3	3	1	
MM7-22SGDSS	5-13	10	1	
MS122118	5-2	54	4	
MS122118	5-2	94B	4	
MS16562-190	5-6	47A	1	
MS16562-191	5-2	220	1	
MS16562-191	5-14	69	1	
MS16562-192	5-2	160	1	
MS16562-192	5-2	409	1	
MS16562-192	5-14	31A	1	
MS16562-192	5-14	74	1	
MS16562-192	5-15	141	1	
MS16562-193	5-2	142	1	
MS16562-193	5-2	165	1	
MS16562-193	5-14	78	1	
MS16562-194	5-15	44	1	
MS16624-1037	5-2	333	1	
MS16624-1037	5-15	74	1	
MS16624-12	5-2	384	1	
MS16624-12	5-15	116	1	
MS16624-18	5-2	22	2	
MS16624-18	5-12	31	2	
MS16633-1015	5-9	2	2	
MS16633-1018	5-2	115	6	
MS16633-1018	5-14	117	6	

PART NUMBER	FIG. - ITEM	TTL REQ	AIRLINE PART NO.
MS20426AD2-3	5-7 62D	4	
MS20426AD2-3	5-7A 17	4	
MS20426AD2-3	5-8 44	4	
MS20426AD3-4	5-2 27	8	
MS20426AD3-4	5-12 42	8	
MS20426AD3-6	5-2 30	24	
MS20426AD3-6	5-12 44	24	
MS20426AD4-4	5-10 6	4	
MS35335-62	5-5 28	1	
MS35338-134	5-6 33	5	
MS35338-135	5-2 108	4	
MS35338-135	5-6 6	2	
MS35338-135	5-6 75	2	
MS35338-135	5-6 79	6	
MS35338-135	5-7 46B	3	
MS35338-135	5-7A 6	4	
MS35338-135	5-14 107	4	
MS35338-136	5-6 12	8	
MS35338-136	5-6 42	1	
MS35338-136	5-7 38B	6	
MS35338-136	5-7A 4	6	
MS35338-137	5-2 63	1	
MS35338-137	5-2 321	1	
MS35338-137	5-6 3	4	
MS35338-137	5-10 2	8	
MS35338-137	5-13 28	2	
MS35338-137	5-15 62	1	
MS35649-24	5-7 53A	1	
MS35649-44	5-7 46C	3	
MS35649-44	5-7 54A	2	
MS35649-44	5-7A 6	4	
MS35649-44	5-12 36	4	
MS51957-1	5-2 33	4	
MS51957-1	5-4 6	4	
MS51957-1	5-7 53B	1	
MS51957-1	5-10 1	2	
MS51957-1	5-11 1	4	
MS51957-12	5-2 70	2	
MS51957-12	5-13 35	2	
MS51957-13	5-5 48	4	
MS51957-13	5-5 102	2	
MS51957-13	5-6 8	2	
MS51957-13	5-6 45	2	
MS51957-13	5-7 4A	1	
MS51957-14	5-2 7	2	
MS51957-14	5-12 38	4	
MS51957-15	5-4 1	2	
MS51957-16	5-6 73	2	
MS51957-18	5-6 17	1	
MS51957-2	5-9 1	2	
MS51957-26	5-14 8	1	
MS51957-27	5-14 115	6	
MS51957-28	5-2 481	2	
MS51957-28	5-2 483	2	
MS51957-28	5-9 19	4	
MS51957-28	5-9 20	4	
MS51957-28	5-9 21	2	
MS51957-28	5-15 213	2	
MS51957-28	5-15 215	2	
MS51957-29	5-2 98	1	

PART NUMBER	FIG. - ITEM	TTL REQ	AIRLINE PART NO.
MS51957-3	5-6 38	3	
MS51957-30	5-2 105	3	
MS51957-30	5-14 104	3	
MS51957-41	5-10 2	8	
MS51957-43	5-2 2	4	
MS51957-7	5-2 378	2	
MS51957-7	5-15 110	2	
MS51959-1	5-5 39C	6	
MS51959-1	5-5 67	4	
MS51959-1	5-7A 29	12	
MS51959-1	5-7A 30B	1	
MS51959-1	5-7A 31	1	
MS51959-12	5-2 113	6	
MS51959-12	5-2 119	2	
MS51959-12	5-6 47	2	
MS51959-12	5-7 2B	2	
MS51959-12	5-7A 1	2	
MS51959-12	5-7A 2	1	
MS51959-12	5-7A 32	1	
MS51959-12	5-14 121	2	
MS51959-13	5-2 163	2	
MS51959-13	5-2 451	8	
MS51959-13	5-5 46	6	
MS51959-13	5-6 5	2	
MS51959-13	5-6 21	4	
MS51959-13	5-6 71	4	
MS51959-13	5-7 39A	4	
MS51959-13	5-7 46A	2	
MS51959-13	5-7 48A	2	
MS51959-13	5-7 52C	1	
MS51959-13	5-7 57A	1	
MS51959-13	5-7 60A	2	
MS51959-13	5-7 61A	1	
MS51959-13	5-7 62A	6	
MS51959-13	5-7A 5	2	
MS51959-13	5-7A 6	3	
MS51959-13	5-7A 9	4	
MS51959-13	5-7A 15	7	
MS51959-13	5-7A 19	4	
MS51959-13	5-9 3	4	
MS51959-13	5-14 76	2	
MS51959-13	5-15 187	8	
MS51959-14	5-2 111	2	
MS51959-14	5-2 433	1	
MS51959-14	5-2 453	4	
MS51959-14	5-7 46H	1	
MS51959-14	5-7A 6	1	
MS51959-14	5-7A 23	1	
MS51959-14	5-14 113	2	
MS51959-14	5-15 166	1	
MS51959-14	5-15 189	4	
MS51959-15	5-5 99	1	
MS51959-15	5-6 82	4	
MS51959-17	5-7 54D	2	
MS51959-2	5-2 399	2	
MS51959-2	5-2 447	2	
MS51959-2	5-7 55A	3	
MS51959-2	5-15 131	2	
MS51959-2	5-15 182	2	
MS51959-26	5-2 46	2	

PART NUMBER	FIG. - ITEM	TTL REQ	AIRLINE PART NO.
MS51959-26	5-2 48	1	
MS51959-26	5-13 7	3	
MS51959-27	5-7 38C	6	
MS51959-27	5-7A 4	6	
MS51959-27	5-9 7	1	
MS51959-27	5-9 21	1	
MS51959-28	5-2 388	4	
MS51959-28	5-9 6	2	
MS51959-28	5-15 120	4	
MS51959-3	5-5 95	2	
MS51959-43	5-10 4	8	
MS51959-44	5-2 40	2	
MS51959-44	5-11 6	2	
MS51959-45	5-5 15	2	
MS51959-46	5-2 100	5	
MS51959-46	5-2 128	1	
MS51959-46	5-2 134	1	
MS51959-46	5-11 11	2	
MS51959-46	5-14 12	2	
MS51959-46	5-14 15	3	
MS51959-6	5-5 64C	2	
MS51959-8	5-7A 14	2	
MS90273-705A	5-2 49	1	
MS90273-705A	5-13 8	1	
MS90539-08	5-2 256J	6	
M72-500VDC500MFD5PCT	5-3 32	1	
NE2	5-2 252	1	
NE2	5-11 7	1	
PB02A16-26P	5-5 18	1	
PB02A18-32P	5-5 1	1	
PB07C18-32P	5-2 37	1	
PB07C18-32P	5-13 20	1	
P312-0008-000	5-2 267	3	
P312-0008-000	5-15 12A	3	
P312-0010-000	5-15 14	3	
P312-0011-000	5-2 268	3	
P312-0028-000	5-6 69	2	
P312-0031-000	5-2 470	4	
P312-0031-000	5-15 211	4	
P312-0063-000	5-2 284	1	
P312-0064-000	5-2 266	2	
P312-0064-000	5-15 26	2	
P312-0097-000	5-2 60	1	
P312-0097-000	5-2 62	1	
P312-0097-000	5-13 27	2	
P312-3060-000	5-2 44	1	
P312-3060-000	5-11 6	1	
P312-3060-000	5-11 10B	1	
P312-3450-000	5-2 52	2	
P312-3450-000	5-13 12	2	
P313-0045-000	5-5 37	2	
P313-0045-000	5-6 11	8	
P313-0045-000	5-6 43	1	
P313-0045-000	5-7 38A	6	
P313-0045-000	5-7A 4	6	
P313-0050-000	5-6 85	2	
P313-0050-000	5-15 203	2	
P313-0051-000	5-2 10	1	
P313-0051-000	5-2 96B	1	
P313-0051-000	5-2 169	1	

PART NUMBER	FIG. - ITEM	TTL REQ	AIRLINE PART NO.
P313-0051-000	5-2 226	6	
P313-0051-000	5-5 2	4	
P313-0051-000	5-5 19	4	
P313-0051-000	5-7 46F	1	
P313-0051-000	5-8 10	2	
P313-0051-000	5-10 3	4	
P313-0051-000	5-14 2	1	
P313-0051-000	5-14 59	6	
P313-0051-000	5-14 82	1	
P313-0054-000	5-2 41	2	
P313-0054-000	5-11 6	2	
P313-0054-000	5-11 10B	2	
P313-0132-000	5-6 54	2	
P313-0132-000	5-6 74	2	
P313-0132-000	5-6 78	6	
P313-0156-000	5-3 12	2	
P313-0156-000	5-3 33	2	
P313-0156-000	5-5 54C	2	
P330-2240-000	5-3 23	2	
P330-2250-000	5-7A 21	1	
P330-2250-000	5-7A 27	2	
P334-0249-000	5-5 27	1	
P334-0253-000	5-3 35	1	
P334-0266-000	5-7 43A	1	
P334-0266-000	5-7 44A	1	
P334-0266-000	5-7A 7	1	
P334-0266-000	5-7A 8	1	
P334-0272-000	5-2 24	2	
P334-0272-000	5-12 34	4	
P334-0278-000	5-7B 34	1	
P342-0141-000	5-5 73	8	
P342-0141-000	5-7 56A	2	
P342-0141-000	5-7 58A	6	
P342-0142-000	5-2 404	3	
P342-0142-000	5-15 136	3	
P342-0142-000	5-15 205	2	
P342-0143-000	5-3 3A	2	
P342-0144-000	5-6 84	2	
P342-0151-000	5-8 17	2	
P342-0151-000	5-8 19	1	
P342-0152-000	5-8 22	4	
P342-0153-000	5-5 5	4	
P342-0153-000	5-5 21	4	
P342-0153-000	5-7 46G	1	
P342-0153-000	5-10 3	4	
P342-0155-000	5-15 72	3	
P342-0156-000	5-2 224	4	
P342-0156-000	5-14 64	4	
P342-0157-000	5-2 227	6	
P342-0157-000	5-2 331	3	
P342-0157-000	5-14 62	6	
P342-0183-000	5-2 390	1	
P342-0183-000	5-15 122	1	
P342-0186-000	5-2 488	1	
P342-0186-000	5-15 220	1	
P342-0747-000	5-3 36	4	
P343-0005-000	5-2 313	2	
P343-0005-000	5-15 54	2	
P343-0016-000	5-2 107	4	
P343-0016-000	5-14 106	4	

PART NUMBER	FIG. - ITEM	TTL REQ	AIRLINE PART NO.
P343-0284-000	5-2 175	1	
P343-0284-000	5-2 210	2	
P343-0284-000	5-5 54E	2	
P343-0284-000	5-5 57	1	
P343-0284-000	5-5 62	2	
P343-0284-000	5-5 63B	1	
P343-0284-000	5-14 53	2	
P343-0284-000	5-14 88	1	
P343-0285-000	5-2 12	1	
P343-0285-000	5-2 121	3	
P343-0285-000	5-2 130	1	
P343-0285-000	5-2 171	1	
P343-0285-000	5-2 250	1	
P343-0285-000	5-2 254	1	
P343-0285-000	5-2 347	2	
P343-0285-000	5-2 363	2	
P343-0285-000	5-2 367	1	
P343-0285-000	5-2 372	1	
P343-0285-000	5-2 375	1	
P343-0285-000	5-2 386	4	
P343-0285-000	5-3 1	4	
P343-0285-000	5-5 44	3	
P343-0285-000	5-7 3A	3	
P343-0285-000	5-11 5	1	
P343-0285-000	5-11 8	1	
P343-0285-000	5-11 10A	1	
P343-0285-000	5-14 84	1	
P343-0285-000	5-14 123	3	
P343-0285-000	5-15 82	2	
P343-0285-000	5-15 95	2	
P343-0285-000	5-15 99	1	
P343-0285-000	5-15 104	1	
P343-0285-000	5-15 107	1	
P343-0285-000	5-15 118	4	
P343-0286-000	5-2 96E	1	
P343-0286-000	5-2 327	1	
P343-0286-000	5-2 351	1	
P343-0286-000	5-8 4	1	
P343-0286-000	5-8 6	1	
P343-0286-000	5-8 11	2	
P343-0286-000	5-14 5	1	
P343-0286-000	5-15 68	1	
P343-0287-000	5-2 256B	3	
P343-0287-000	5-3 33	2	
P343-0287-000	5-5 25	4	
P343-0287-000	5-12 17	1	
P343-0288-000	5-2 158	2	
P343-0288-000	5-14 30	2	
P343-0288-000	5-15 78	3	
P343-0288-000	5-15 86	1	
P343-0289-000	5-2 117	3	
P343-0289-000	5-2 123	3	
P343-0289-000	5-14 119	3	
P343-0289-000	5-14 125	3	
P343-0290-000	5-2 339	3	
P343-0295-000	5-15 15	1	
P343-0297-000	5-2 57	2	
P343-0297-000	5-2 86	3	
P343-0297-000	5-2 148	2	
P343-0297-000	5-2 191	1	

PART NUMBER	FIG. - ITEM	TTL REQ	AIRLINE PART NO.
P343-0297-000	5-7 45A	1	
P343-0297-000	5-13 24	2	
P343-0297-000	5-13 46	5	
P343-0297-000	5-13 50	3	
P343-0297-000	5-14 22	2	
P343-0297-000	5-14 37	1	
P343-0298-000	5-2 167	4	
P343-0298-000	5-2 181	4	
P343-0298-000	5-2 293	2	
P343-0298-000	5-13 47	1	
P343-0298-000	5-14 80	4	
P343-0298-000	5-14 94	4	
P343-0298-000	5-15 34	2	
P343-0298-000	5-15 50	3	
P343-0300-000	5-2 192	1	
P343-0300-000	5-2 199	3	
P343-0300-000	5-2 349	2	
P343-0300-000	5-3 4	3	
P343-0300-000	5-3 19	3	
P343-0300-000	5-14 36	1	
P343-0300-000	5-14 40	3	
P343-0300-000	5-15 28	2	
P343-0300-000	5-15 84	2	
P343-0301-000	5-2 286	2	
P343-0309-000	5-2 389	1	
P343-0309-000	5-2 485	2	
P343-0309-000	5-12 2	4	
P343-0309-000	5-15 121	1	
P343-0309-000	5-15 217	2	
P343-0310-000	5-2 39	3	
P343-0310-000	5-11 6	3	
P343-0327-000	5-2 461	1	
P343-0327-000	5-15 192B	1	
P343-0328-000	5-2 239	1	
P343-0328-000	5-12 7	1	
P343-0328-000	5-14 67	1	
P343-0330-000	5-12 6	5	
P343-0331-000	5-2 17	4	
P343-0331-000	5-5 23	4	
P343-0332-000	5-5 11	3	
P343-0334-000	5-2 14A	2	
P343-0334-000	5-12 5	1	
P343-0336-000	5-5 7	3	
P343-0362-000	5-2 256S	1	
P343-0365-000	5-2 256L	1	
P343-0382-000	5-3 32	1	
P343-0473-000	5-2 261A	2	
P343-0473-000	5-15 4	2	
P346-6016-000	5-9 4	2	
P347-0021-000	5-6 32	5	
P347-0035-000	5-6 40	3	
P347-0043-000	5-6 40A	1	
P347-0050-000	5-2 320	1	
P347-0050-000	5-2 357	2	
P347-0050-000	5-15 61	1	
P347-0054-000	5-2 5	12	
P347-0054-000	5-11 2	12	
P347-0089-000	5-15 46	2	
P347-0089-000	5-15 48	2	
P347-0090-000	5-8 24	4	

PART NUMBER	FIG. - ITEM		TTL REQ	AIRLINE PART NO.
P347-0091-000	5-2	101	1	
P347-0091-000	5-14	18	1	
P347-0103-000	5-2	458	4	
P347-0103-000	5-15	199	4	
P347-0112-000	5-15	89	2	
P347-0159-000	5-2	486	2	
P347-0159-000	5-15	60	1	
P347-0159-000	5-15	218	2	
P347-0168-000	5-2	472	4	
P347-0168-000	5-15	207	4	
P347-0169-000	5-15	191	1	
P347-0169-000	5-15	194	2	
P347-0171-000	5-2	464	3	
P36713	5-5	26	1	
P96852	5-2	109	4	
P96852	5-14	108	1	
P96852	5-14	109	1	
P96852	5-14	110	1	
P96852	5-14	111	1	
RB1153	5-6	36	5	
RB3-26D737	5-2	340	1	
RB3-26D737	5-15	79	1	
RC07GF102K	5-7B	10	1	
RC07GF104J	5-7A	28	AR	
RC07GF104K	5-7B	27	1	
RC07GF114J	5-7A	28	AR	
RC07GF124J	5-7A	28	AR	
RC07GF134J	5-7A	28	AR	
RC07GF153K	5-7B	25	1	
RC07GF154J	5-7A	28	AR	
RC07GF164J	5-7A	28	AR	
RC07GF183K	5-7B	42	1	
RC07GF184J	5-7A	28	AR	
RC07GF204J	5-7A	28	AR	
RC07GF222K	5-7B	8	1	
RC07GF224J	5-7A	28	AR	
RC07GF244J	5-7A	28	AR	
RC07GF272K	5-7B	5	1	
RC07GF274J	5-7A	28	AR	
RC07GF274K	5-7B	6	1	
RC07GF304J	5-7A	28	AR	
RC07GF332K	5-7B	22	1	
RC07GF334J	5-7A	28	AR	
RC07GF392K	5-7B	29	1	
RC07GF392K	5-7B	36	1	
RC07GF474K	5-7B	12	1	
RC07GF623J	5-7A	28	AR	
RC07GF683J	5-7A	28	AR	
RC07GF753J	5-7A	28	AR	
RC07GF823J	5-7A	28	AR	
RC07GF913J	5-7A	28	AR	
RC20GF100K	5-7	51	1	
RC20GF100K	5-7A	22	1	
RC20GF102K	5-3	16	1	
RC20GF102K	5-7	12	1	
RC20GF103J	5-7	49A	AR	
RC20GF103K	5-7B	21	1	
RC20GF104J	5-7	49	AR	
RC20GF104K	5-7	18	1	
RC20GF104K	5-8	33	1	

PART NUMBER	FIG. - ITEM		TTL REQ	AIRLINE PART NO.
RC20GF104K	5-8	33A	1	
RC20GF113J	5-7	49A	AR	
RC20GF114J	5-7	49	AR	
RC20GF123J	5-7	49A	AR	
RC20GF124J	5-7	49	AR	
RC20GF124K	5-7	7	1	
RC20GF133J	5-7	49A	AR	
RC20GF134J	5-7	49	AR	
RC20GF151K	5-8	36	1	
RC20GF151K	5-8	36A	1	
RC20GF153J	5-7	49A	AR	
RC20GF153K	5-7	21	1	
RC20GF154J	5-7	49	AR	
RC20GF163J	5-7	49A	AR	
RC20GF164J	5-7	49	AR	
RC20GF183J	5-7	49A	AR	
RC20GF184J	5-7	49	AR	
RC20GF184K	5-7	13	1	
RC20GF203J	5-7	49A	AR	
RC20GF204J	5-7	49	AR	
RC20GF220K	5-6	25	1	
RC20GF222K	5-7	11	1	
RC20GF223J	5-7	49A	AR	
RC20GF224J	5-7	49	AR	
RC20GF243J	5-7	49A	AR	
RC20GF244J	5-7	49	AR	
RC20GF272K	5-7	23	1	
RC20GF273J	5-7	49A	AR	
RC20GF274J	5-7	49	AR	
RC20GF302J	5-7	49A	AR	
RC20GF303J	5-7	49A	AR	
RC20GF332J	5-7	49A	AR	
RC20GF332K	5-7	8	1	
RC20GF333J	5-7	49A	AR	
RC20GF333K	5-7	41	1	
RC20GF362J	5-7	49A	AR	
RC20GF391K	5-3	10	1	
RC20GF392J	5-7	49A	AR	
RC20GF392K	5-7	19	1	
RC20GF392K	5-7	19A	1	
RC20GF432J	5-7	49A	AR	
RC20GF472J	5-7	49A	AR	
RC20GF473K	5-7	16	1	
RC20GF473K	5-7B	21	1	
RC20GF512J	5-7	49A	AR	
RC20GF560K	5-8	36	1	
RC20GF560K	5-8	36A	1	
RC20GF622J	5-7	49A	AR	
RC20GF623J	5-7	49	AR	
RC20GF682J	5-7	49A	AR	
RC20GF683J	5-7	49	AR	
RC20GF752J	5-7	49A	AR	
RC20GF753J	5-7	49	AR	
RC20GF822J	5-7	49A	AR	
RC20GF823J	5-7	49	AR	
RC20GF912J	5-7	49A	AR	
RC20GF913J	5-7	49	AR	
RC32GF103K	5-5	79	2	
RC32GF104K	5-2	255	1	
RC32GF104K	5-14	101	1	

PART NUMBER	FIG. - ITEM	TTL REQ	AIRLINE PART NO.
RC32GF223K	5-7	20	1
RC32GF223K	5-7B	20	1
RC32GF270K	5-3	5	1
RC32GF272K	5-8	27	1
RC32GF272K	5-8	29	1
RC32GF330K	5-3	5	1
RC32GF472K	5-7	27	1
RC32GF472K	5-7	27A	1
RC32GF472K	5-7B	26	1
RC32GF472K	5-7B	33	1
RC32GF682K	5-7	22	1
RC32GF682K	5-7B	30	1
RC42GF102K	5-7	34	1
RC42GF102K	5-7B	15	1
RN60D1002F	5-7	17	1
RN60D1002F	5-7B	17	1
RN60D5620F	5-3	34A	2
RN65D1102F	5-3	17	1
RN65D1102F	5-3	17A	1
RN65D1102F	5-5	88	1
RN65D1212F	5-3	6	2
RN65D1213F	5-5	84	2
RN65D1471F	5-5	90	1
RN65D1621F	5-5	83	1
RN65D1962F	5-5	85	2
RN65D2151F	5-5	76	1
RN65D2610F	5-8	37	1
RN65D2611F	5-5	77	1
RN65D3161F	5-5	82	1
RN65D3830F	5-5	87	1
RN65D3830F	5-8	38	1
RN65D4222F	5-5	91	1
RN65D4640F	5-5	86	1
RN65D6811F	5-5	92	1
RN65D7681F	5-3	17A	1
RN65D8251F	5-5	75	1
RN65D9091F	5-5	89	1
RSM2-121ROG	5-6	22	AR
RSM2-133ROG	5-6	22	AR
RSM2-150ROG	5-6	22	AR
RSM2-162ROG	5-6	22	AR
RSM2-178ROG	5-6	22	AR
RSM2-196ROG	5-6	22	AR
RSM2-215ROG	5-6	22	AR
RSM2-237ROG	5-6	22	AR
RSM2-261ROG	5-6	22	AR
RSM2-287ROG	5-6	22	AR
RSM2-316ROG	5-6	22	AR
RSM2-348ROG	5-6	22	AR
RSM2-383ROG	5-6	22	AR
RSM2-422ROG	5-6	22	AR
RSM2-464ROG	5-6	22	AR
RSM2-511ROG	5-6	22	AR
RSM5-450H	5-6	23	AR
RS2C40R00J	5-8	30	1
RS5-10000G	5-6	23	AR
RS5-41510ROH	5-6	23	AR
RS5-41620ROH	5-6	23	AR
RS5-41680ROH	5-6	23	AR
RS5-41750ROH	5-6	23	AR

PART NUMBER	FIG. - ITEM	TTL REQ	AIRLINE PART NO.
RS5-41910ROH	5-6	23	AR
RS5-830ROG	5-6	23	AR
RS5141560ROH	5-6	23	AR
RS806-1B	5-2	450	2
RS806-1B	5-15	186	2
RTMT12M	5-7	47	2
RTMT12M	5-7	52B	1
RTMT12M	5-7	54	1
RTMT12M	5-7	54	1
RV5LAXSB102B	5-3	35	1
RW69V180	5-8	13A	1
RW69V221	5-8	30	1
RW69V681	5-6	29A	1
R3484X3-16NI	5-2	91	3
R4008X1-8CHROMATEDP	5-8	42	4
SFR144PPK25-26	5-2	425A	8
SFR144PPK25-26	5-2	439A	2
SFR144PPK25-26	5-15	149	2
SFR144PPK25-26	5-15	158A	8
SFR144PPK25-26	5-15	172	2
SFR144PPK25-26	5-15	176	4
SFR144PPK28-7	5-2	417	2
SFR144PPK28-7	5-2	438	2
SFR144PPK28-7	5-2	441	2
SFR168PPK25-26	5-2	161	1
SFR168PPK25-26	5-2	245	2
SFR168PPK25-26	5-15	102	1
SFR168PPK25-26	5-15	151	1
SFR168PPK25-26	5-15	153	2
SFR168PPK25-26	5-15	162A	2
SFR168PPK25-26	5-15	168	2
SFR168PPK25-26	5-15	170	3
SFR168PPK25-26	5-15	185A	2
SFR168PPK25-26	5-15	197	1
SFR168PPK28-7	5-2	143	1
SFR168PPK28-7	5-2	370	1
SFR168PPK28-7	5-2	419	1
SFR168PPK28-7	5-2	421	2
SFR168PPK28-7	5-2	431	2
SFR168PPK28-7	5-2	436	2
SFR168PPK28-7	5-2	455	2
SFR168PPK28-7	5-14	32	1
SFR168PPK28-7	5-14	55	2
SKT2BC	5-7	4B	1
SKT2BC	5-7	4C	1
SKT2BC	5-7	4D	1
SKT41WHT	5-7B	48	3
SL276-198DWHT	5-7B	50	19
SMRE7SG	5-2	51	1
SMRE7SG	5-13	10	1
SPL4040-2HOTTINNED	5-2	288	1
SPL4040-2HOTTINNED	5-2	295	2
SPL4040-2HOTTINNED	5-15	29A	1
SPL4040-2HOTTINNED	5-15	35A	1
SPL4040-4HOTTINNED	5-2	72	1
SPL4040-4HOTTINNED	5-2	256G	1
SPL4040-4HOTTINNED	5-2	273	1
SPL4040-4HOTTINNED	5-3	12	1
SPL4040-4HOTTINNED	5-3	32	1
SPL4040-4HOTTINNED	5-6	80	1

PART NUMBER	FIG. - ITEM		TTL REQ	AIRLINE PART NO.
SPL4040-4HOTTINNED	5-13	37	1	
SPL4040-4HOTTINNED	5-15	16A	1	
SPL4040-4HOTTINNED	5-15	21A	1	
ST1050-34	5-5	60	2	
ST1050-34	5-5	63A	1	
ST1050-34	5-7	47	2	
ST1050-34	5-7	52B	1	
S125-250FHHP15LY5	5-2	395A	1	
TF300	5-7	45	1	
TF300	5-7	55	3	
TF300	5-7	56	2	
TF300	5-7	58	6	
TF300	5-7A	29	12	
TF300	5-7A	30	1	
TF300	5-7A	30A	1	
TF300	5-15	83	2	
TXB2P032-037-3	5-7A	27	2	
TXB2P032-037-3B	5-7A	21	1	
UG290AU	5-3	36	1	
UG569AU	5-2	15	1	
USLS-465	5-2	463	1	
USLS-465	5-15	193	1	
VIHKE8-2C	5-5	10	1	
WEE560	5-7B	16	1	
X1463C	5-2	92	10	
1N1095	5-6	26	6	
1N1095	5-6	48	1	
1N270	5-7	35	1	
1N270	5-7B	32	1	
1N4004	5-6	48	1	
1N4005	5-6	26	6	
1N458	5-6	29	8	
1N461	5-7	6	1	
1N461	5-7	6A	1	
1N461	5-7	6B	1	
1N461	5-7B	3	1	
1N461	5-7B	23	1	
1N461	5-7B	24	1	
1N647	5-7	5	1	
1N647	5-7	5	1	
1N647	5-7	5	1	
1N647	5-7	5A	1	
1N647	5-7	5A	1	
1N647	5-7	5A	1	
1N647	5-7	5B	1	
1N647	5-7	5B	1	
1N647	5-7	5B	1	
1N647	5-7	5C	1	
1N647	5-7	5C	1	
1N647	5-7	5C	1	
1N647	5-7B	38	1	
1N647	5-7B	39	1	
1N647	5-7B	40	1	
1N647	5-7B	41	1	
1N647	5-8	31	1	
1N914	5-3	7	1	
1N914	5-7	50B	1	
1N914	5-7	50C	1	
1N914	5-7A	28A	1	
1N914	5-7A	28B	1	

PART NUMBER	FIG. - ITEM		TTL REQ	AIRLINE PART NO.
1N965B	5-7B	44	1	
100-200-16-8	5-8	25A	1	
100-200-7-0	5-8	41	2	
100B3000C75	5-5	17	4	
1011HOTTINNED	5-2	36A	1	
1011HOTTINNED	5-11	10B	1	
1024-6HOTTINNED	5-2	103	1	
1024-6HOTTINNED	5-2	132	1	
1024-6HOTTINNED	5-2	238	1	
1024-6HOTTINNED	5-2	460	1	
1024-6HOTTINNED	5-2	466	1	
1024-6HOTTINNED	5-11	10A	1	
1024-6HOTTINNED	5-14	19B	1	
1024-6HOTTINNED	5-15	192A	1	
1024-6HOTTINNED	5-15	196	1	
12DJ8	5-8	8	1	
1214-00-00-0543	5-7	43B	1	
1214-00-00-0543	5-7	44B	1	
1214-00-00-0543	5-7A	7	1	
1214-00-00-0543	5-7A	8	1	
143-006-01	5-5	39	3	
143-012-01	5-5	65	2	
150D105X0035A2	5-7	40	1	
150D154X0035A2	5-8	35	1	
150D154X0035A2	5-8	35A	1	
150D224X0035A2	5-7B	14	1	
150D476X0035S2	5-7B	44	1	
1503	5-7	43C	1	
15517-002	5-2	261	2	
15517-002	5-15	3A	2	
1594-3	5-3	27	3	
178-2015	5-2	94	1	
178-2015	5-13	64	1	
18-1117	5-5	54	19	
18-124	5-2	88	5	
18-124	5-13	58	1	
18-124	5-13	59	1	
18-124	5-13	60	1	
18-124	5-13	61	1	
18-124	5-13	62	1	
1804-00	5-5	54D	2	
1804-00	5-10	3	4	
183313F	5-6	60	1	
183314F	5-6	62	1	
183315F	5-6	64	1	
1902-00CADPL	5-2	168	4	
1902-00CADPL	5-2	182	4	
1902-00CADPL	5-5	74	8	
1902-00CADPL	5-14	81	4	
1902-00CADPL	5-14	95	4	
190907A	5-2	257	1	
190907A	5-15	1	1	
190908A	5-2	356	1	
190908A	5-15	88	1	
190909A	5-2	311	1	
190909A	5-2	377	1	
190909A	5-15	52	1	
190909A	5-15	109	1	
190910A	5-2	312	1	
190910A	5-15	53	1	

PART NUMBER	FIG. - ITEM	TTL REQ	AIRLINE PART NO.
1914-00	5-3 35	1	
196P10301S4	5-7 28	1	
196P47304S4	5-8 25	1	
196P68302S4	5-8 28	1	
196P68392S4	5-7 36	1	
196P68392S4	5-7B 46	1	
2A1DB12	5-2 116	3	
2A1DB12	5-14 118	3	
2N1150	5-7 9	1	
2N1150	5-7 9A	1	
2N1150	5-7 9B	1	
2N1156	5-7 52	1	
2N1156	5-7 52A	1	
2N1445	5-7 53	1	
2N1445	5-7A 20	1	
2N1893	5-7A 25	1	
2N1893	5-7A 26	1	
2N697	5-7B 2	1	
2N697	5-7B 9	1	
2N697	5-7B 11	1	
2017-10HOTTINNED	5-2 43	1	
2014-10HOTTINNED	5-2 64	1	
2014-10HOTTINNED	5-13 29	1	
2104-04-01-2520N	5-2 9	1	
2104-04-01-2520N	5-5 4	1	
2104-04-01-2520N	5-5 42	3	
2104-04-01-2520N	5-5 58	2	
2104-04-01-2520N	5-5 61	2	
2104-04-01-2520N	5-7 46D	1	
2104-04-01-2520N	5-7A 6	1	
2104-04-01-2520N	5-8 13	2	
2104-04-01-2520N	5-14 67A	1	
2104-06-02-2520N	5-6 13	1	
210644F	5-6 51	1	
22H5T51EG	5-3 8	1	
222491F	5-6 66	1	
2465-009W5T0102P	5-2 87A	5	
2465-009W5T0102P	5-13 52	1	
2465-009W5T0102P	5-13 53	1	
2465-009W5T0102P	5-13 54	1	
2465-009W5T0102P	5-13 55	1	
2465-009W5T0102P	5-13 56	1	
26SM12AR	5-6 9	1	
26SM12P	5-5 36	1	
26SM12P	5-6 9	1	
264672F	5-6 51	1	
27680	5-8 16	1	
280-0450-000	5-11 4	1	
280-2389-000	5-10 1	1	
280-2396-000	5-11 1	1	
2856005X5U0102P	5-5 52	50	
28950	5-7 39	1	
28950	5-7A 5	1	
3SAE2057A2	5-5 93	1	
3S2791FB100KOC	5-6 31	1	
30-181-11	5-13 17	1	
302-0007-000	5-7 54B	2	
302-0024-000	5-2 230	6	
302-0024-000	5-14 61	6	
302-0263-000	5-3 33	4	
302-0385-000	5-7A 21	1	

PART NUMBER	FIG. - ITEM	TTL REQ	AIRLINE PART NO.
302-0385-000	5-7A 27	2	
302-22	5-7 46	1	
302-22	5-7A 6	1	
305-0064-000	5-2 76	2	
305-0064-000	5-2 78	2	
305-0069-000	5-2 233	4	
3098-005-000	5-10 2	2	
310-0045-000	5-2 170	1	
310-0045-000	5-2 176	1	
310-0045-000	5-5 98	1	
310-0045-000	5-6 19	1	
310-0045-000	5-6 45A	2	
310-0045-000	5-7 54C	2	
310-0045-000	5-9 3	4	
310-0045-000	5-14 83	1	
310-0045-000	5-14 89	1	
310-0046-000	5-2 98A	1	
310-0053-000	5-2 201	3	
310-0053-000	5-2 289	2	
310-0053-000	5-2 297	2	
310-0053-000	5-14 42	3	
310-0053-000	5-15 30	3	
310-0054-000	5-2 96D	1	
310-0054-000	5-2 229	6	
310-0054-000	5-2 251	1	
310-0054-000	5-2 256E	2	
310-0054-000	5-2 256W	1	
310-0054-000	5-2 281	1	
310-0054-000	5-2 376	1	
310-0054-000	5-11 8	1	
310-0054-000	5-14 4	1	
310-0054-000	5-14 60	6	
310-0054-000	5-15 23	2	
310-0054-000	5-15 37	2	
310-0054-000	5-15 78A	3	
310-0055-000	5-2 14B	2	
310-0055-000	5-2 18	4	
310-0055-000	5-12 8	6	
310-0058-000	5-12 13	1	
310-0061-000	5-2 256P	2	
310-0062-000	5-2 68	1	
310-0062-000	5-13 33	1	
310-0070-000	5-2 34	4	
310-0070-000	5-11 1	4	
310-0074-000	5-2 58	2	
310-0074-000	5-2 84	6	
310-0074-000	5-2 87	3	
310-0074-000	5-2 287	2	
310-0074-000	5-2 294	2	
310-0074-000	5-3 4	3	
310-0074-000	5-3 19	3	
310-0074-000	5-6 86	2	
310-0074-000	5-13 25	2	
310-0074-000	5-13 48	6	
310-0074-000	5-13 51	3	
310-0074-000	5-15 29	2	
310-0074-000	5-15 35	2	
310-0074-000	5-15 204	2	
310-0075-000	5-2 149	2	
310-0075-000	5-2 193	2	

PART NUMBER	FIG. - ITEM	TTL REQ	AIRLINE PART NO.
310-0075-000	5-2 200	3	
310-0075-000	5-7A 32	1	
310-0075-000	5-7B 34	1	
310-0075-000	5-14 23	2	
310-0075-000	5-14 38	2	
310-0075-000	5-14 41	3	
310-0076-000	5-2 256V	1	
310-0076-000	5-2 278	1	
310-0076-000	5-3 12	2	
310-0076-000	5-5 3	4	
310-0076-000	5-5 20	4	
310-0076-000	5-5 59	1	
310-0076-000	5-5 63	2	
310-0076-000	5-8 12	2	
310-0076-000	5-15 21	2	
310-0077-000	5-5 8	3	
310-0077-000	5-5 12	3	
310-0077-000	5-5 38	2	
310-0078-000	5-2 240	1	
310-0078-000	5-2 462	1	
310-0078-000	5-2 465	3	
310-0078-000	5-3 39	4	
310-0078-000	5-12 9	1	
310-0078-000	5-14 68	1	
310-0078-000	5-15 192	1	
310-0078-000	5-15 192C	1	
310-0078-000	5-15 195	2	
310-0082-000	5-2 256M	1	
310-0082-000	5-2 256T	1	
310-0128-000	5-2 232	4	
310-0129-000	5-15 30	1	
310-0278-000	5-2 71	2	
310-0278-000	5-8 20	1	
310-0278-000	5-12 37	4	
310-0278-000	5-13 36	2	
310-0395-000	5-3 32	1	
310-0396-000	5-2 8	2	
310-0396-000	5-2 11	1	
310-0396-000	5-2 96C	1	
310-0396-000	5-2 102	1	
310-0396-000	5-2 131	1	
310-0396-000	5-2 256F	3	
310-0396-000	5-2 272	1	
310-0396-000	5-2 328	1	
310-0396-000	5-7 46E	1	
310-0396-000	5-11 10A	1	
310-0396-000	5-14 19	1	
310-0396-000	5-15 16	1	
310-0396-000	5-15 69	1	
310-0397-000	5-2 42	1	
310-0397-000	5-11 6	1	
310-0397-000	5-11 10B	1	
310-0402-000	5-2 67	1	
310-0402-000	5-13 32	1	
310-6320-000	5-7A 14	4	
310-6340-000	5-6 76A	2	
310-6360-000	5-9 5	2	
328-0005-000	5-2 127	1	
33-90	5-2 55	1	
33-90	5-13 21	1	

PART NUMBER	FIG. - ITEM	TTL REQ	AIRLINE PART NO.
330-2081-000	5-3 20	4	
330-2082-000	5-3 22	4	
330-2347-000	5-3 24	2	
334-0043-000	5-9 17	1	
334-0043-000	5-10 12	1	
335-0022-000	5-12 11	1	
338-2020-000	5-9 12	1	
338-2020-000	5-10 7	1	
340-0641-000	5-3 39	4	
340-0642-000	5-6 2	4	
38822	5-8 16	1	
4-48X1-8 6SPLINEOVP T18-8SST	5-2 138	1	
4-48X1-8 6SPLINEOVP T18-8SST	5-2 244	3	
4-48X1-8 6SPLINEOVP T18-8SST	5-2 317	2	
4-48X1-8 6SPLINEOVP T18-8SST	5-2 324	2	
4-48X1-8 6SPLINEOVP T18-8SST	5-2 337	4	
4-48X1-8 6SPLINEOVP T18-8SST	5-2 427	2	
4-48X1-8 6SPLINEOVP T18-8SST	5-2 443	2	
4-48X1-8 6SPLINEOVP T18-8SST	5-6 58	2	
4-48X1-8 6SPLINEOVP T18-8SST	5-11 10	3	
4-48X1-8 6SPLINEOVP T18-8SST	5-13 16	1	
4-48X1-8 6SPLINEOVP T18-8SST	5-14 11	1	
4-48X1-8 6 SPLINEOVP T18-8SST	5-15 43	2	
4-48X1-8 6SPLINEOVP T18-8SST	5-15 58	2	
4-48X1-8 6SPLINEOVP T18-8SST	5-15 65	2	
4-48X1-8 6SPLINEOVP T18-8SST	5-15 160	2	
4-48X1-8 6SPLINEOVP T18-8SST	5-15 178	2	
4D4A12	5-2 348	2	
4D4A12	5-5 71	8	
4D4A12	5-7 45	1	
4D4A12	5-7 55	3	
4D4A12	5-7 56	2	
4D4A12	5-7 58	6	
40C73A1	5-7A 20A	1	
4007-6HOTTINNED	5-5 54B	2	
4012HOTTINNED	5-2 256N	1	
4012HOTTINNED	5-7A 8	1	
4012HOTTINNED	5-13 48A	1	
4040-2HOTTINNED	5-6 34	2	
4040-2HOTTINNED	5-6 87	4	
4040-2HOTTINNED	5-7A 30B	1	
4040-2HOTTINNED	5-7A 31	1	
4040-2HOTTINNED	5-7A 32	1	
43A159	5-6 39	1	

PART NUMBER	FIG. - ITEM	TTL REQ	AIRLINE PART NO.
43A159	5-6 39	1	
4422-11-117	5-2 256H	1	
491-32-11-080-933	5-2 340A	2	
491-32-11-080-933	5-15 79A	2	
500-1084-003	5-2 263A	AR	
500-1084-003	5-15 7A	AR	
500-1084-003	5-15 162	AR	
500-1084-003	5-15 184	AR	
500-1086-003	5-15 7	AR	
500-1096-003	5-2 263	AR	
500-1126-003	5-2 129	2	
500-1126-003	5-2 135	2	
500-1126-003	5-11 11	2	
500-1126-003	5-14 9	1	
500-1126-003	5-14 13	2	
500-1126-003	5-14 16	3	
502-1375-003	5-3 12	2	
502-5197-002	5-2 334A	1	
502-5197-002	5-15 75A	1	
503-4970-001	5-5 22	2	
504-0725-002	5-2 263B	AR	
504-0725-003	5-15 7B	AR	
504-7698-002	5-8 40	4	
506-0962-002	5-2 183	1	
506-0962-002	5-14 99	1	
506-0993-002	5-2 221	1	
506-5938-003	5-2 425B	4	
506-5938-003	5-15 158	4	
506-7367-002	5-5 41	6	
506-7367-002	5-5 69	4	
5100-25C	5-2 369	1	
5100-25C	5-15 101	1	
5100-37C	5-2 150	1	
5100-37C	5-14 26	1	
5105-12	5-3 26	1	
5133-25C	5-2 262	1	
5133-25C	5-2 360	1	
5133-25C	5-15 6	1	
5133-25C	5-15 92	1	
5133-9C	5-5 40	6	
5133-9C	5-5 68	4	
515951	5-6 77	2	
522-0998-005	5-1 1	1	
522-0998-005	5-11	REF	
522-0999-002	5-1 2	1	
522-0999-002	5-10	REF	
522-1002-004	5-4 4	3	
522-1002-004	5-8	REF	
522-1076-004	5-1 4	1	
522-1076-004	5-9	REF	
522-2473-005	5-1 1A	1	
522-2473-005	5-2	REF	
522-2474-004	5-1 3	1	
522-2474-004	5-4	REF	
526-6500-000	5-7 38	1	
526-6500-000	5-7A 4	1	
528-0023-005	5-4 5	2	
528-0023-005	5-4 5	2	
528-0023-005	5-7	REF	
528-0154-005	5-4 3	1	

PART NUMBER	FIG. - ITEM	TTL REQ	AIRLINE PART NO.
528-0154-005	5-6	REF	
528-0531-001	5-4 5	2	
528-0531-001	5-7A	REF	
535-301	5-8 26	1	
540-7131-002	5-7 60C	1	
540-7132-002	5-7 60	2	
540-7767-002	5-7A 34	2	
540-9006-003	5-2 53	2	
540-9006-003	5-13 11	2	
540-9022-003	5-3 19	3	
540-9051-003	5-2 269	1	
540-9168-003	5-2 350	1	
540-9168-003	5-15 85	1	
540-9172-003	5-6 7	2	
540-9209-003	5-5 13	3	
541-3616-002	5-9 2	2	
541-3617-002	5-9 2	2	
541-3620-002	5-9 10	2	
541-5180-002	5-6 16	1	
541-5950-002	5-7A 14	2	
541-5966-002	5-6 18	1	
541-5977-002	5-2 124	3	
541-5977-002	5-14 126	3	
541-5978-002	5-6 76	2	
541-6502-002	5-9 14	1	
541-6502-002	5-10 9	1	
541-6503-002	5-9 15	1	
541-6503-002	5-10 10	1	
541-6506-002	5-9 12	1	
541-6506-002	5-10 7	1	
541-6507-002	5-9 12	1	
541-6507-002	5-10 7	1	
541-6508-002	5-9 16	1	
541-6508-002	5-10 11	1	
541-6509-002	5-9 13	1	
541-6509-002	5-10 8	1	
541-6510-002	5-9 11	2	
541-6510-002	5-10 6	2	
541-6554-005	5-8 7	1	
541-7455-002	5-5 16	2	
541-9538-002	5-7 30	3	
541-9593-002	5-7 29	3	
542-0424-005	5-4 1	1	
542-3048-003	5-9 9	1	
542-3051-005	5-9 22	1	
542-7498-003	5-15 32A	2	
542-7498-003	5-15 174	AR	
542-7516-002	5-3 26	2	
542-7681-002	5-8 2	1	
542-7682-002	5-7 1	2	
542-7682-002	5-7A 3	2	
542-7695-003	5-7 2	1	
542-7695-003	5-7 2A	1	
542-7695-003	5-7A 2	1	
542-7768-002	5-7 62B	2	
542-7768-002	5-7A 17	2	
542-7768-002	5-8 43	2	
543-3461-004	5-4 5	2	
543-3461-004	5-4 5	2	
543-3461-004	5-7	REF	

PART NUMBER	FIG. - ITEM	TTL REQ	AIRLINE PART NO.
543-5602-003	5-6 55	AR	
543-5644-003	5-2 152	1	
543-5644-003	5-14 25	1	
543-5645-003	5-2 140	1	
543-5645-003	5-13 18	1	
543-5649-003	5-2 256X	1	
543-5649-003	5-2 275	4	
543-5649-003	5-2 282	1	
543-5649-003	5-2 290	2	
543-5649-003	5-2 298	2	
543-5649-003	5-15 12	4	
543-5649-003	5-15 24	2	
543-5649-003	5-15 31	2	
543-5649-003	5-15 38	2	
543-5650-003	5-2 361	AR	
543-5650-003	5-15 93	AR	
543-5658-003	5-2 341	1	
543-5658-003	5-15 80	2	
543-5670-002	5-3 20	1	
543-5671-002	5-3 22	1	
543-5672-002	5-3 21	1	
543-5673-002	5-3 23	1	
543-5679-002	5-3 29	1	
543-5680-002	5-3 30	1	
543-5681-002	5-3 31	1	
543-5682-002	5-3 25	1	
543-5683-002	5-3 26	1	
543-5685-002	5-3 13	1	
543-5690-002	5-3 4	1	
543-5691-002	5-3 24	1	
543-5693-002	5-3 37	1	
543-5694-002	5-3 39	4	
543-5695-002	5-3 38	1	
543-5702-004	5-3 40	1	
543-5713-002	5-7 4F	1	
543-5714-002	5-7 4	1	
543-5715-002	5-7 61C	1	
543-5716-002	5-7 61	1	
543-5717-002	5-7 48C	1	
543-5717-002	5-7A 11	1	
543-5718-002	5-7 48	1	
543-5719-002	5-7 63	1	
543-5730-004	5-7 37	1	
543-5761-004	5-7 3	1	
543-5770-002	5-7 62	1	
543-5771-003	5-7 62C	1	
543-5946-002	5-6 56	1	
543-5947-002	5-6 67	1	
543-5948-002	5-6 57	1	
543-5955-002	5-6 68	2	
543-5956-002	5-6 15	3	
543-5957-002	5-6 14	3	
543-5966-002	5-6 81	1	
543-5967-002	5-6 1	4	
543-6124-002	5-8 39	1	
543-6125-002	5-8 45	1	
543-6126-002	5-8 21	1	
543-6133-003	5-8 5	1	
543-6134-003	5-8 3	1	

PART NUMBER	FIG. - ITEM	TTL REQ	AIRLINE PART NO.
543-6140-005	5-8 38A	1	
543-6141-005	5-8 23	1	
543-6213-000	5-5 9	3	
543-6215-000	5-5	1	
543-6217-002	5-5 53	5	
543-6219-002	5-5 24	1	
543-6221-002	5-5 55	1	
543-6222-002	5-5 47	1	
543-6223-002	5-5 14	1	
543-6225-003	5-5 101	1	
543-6230-003	5-5 50	1	
543-7318-002	5-5 56	1	
543-7318-002	5-8 18	1	
543-7577-003	5-9 8	1	
543-9823-002	5-2 316	1	
543-9823-002	5-15 57	1	
543-9826-002	5-2 20	2	
543-9826-002	5-12 30	2	
543-9827-002	5-2 23	2	
543-9827-002	5-12 33	2	
543-9828-002	5-2 21	2	
543-9828-002	5-12 32	2	
543-9830-002	5-2 490	1	
543-9830-002	5-15 222	1	
543-9833-002	5-2 395	1	
543-9833-002	5-15 127	1	
543-9834-002	5-2 411	1	
543-9834-002	5-15 143	1	
543-9836-002	5-12 14	1	
543-9837-002	5-2 428	1	
543-9837-002	5-15 161	1	
543-9838-002	5-2 50	1	
543-9838-002	5-13 9	1	
543-9839-002	5-2 391	2	
543-9839-002	5-2 491	2	
543-9839-002	5-15 123	5	
543-9839-002	5-15 223	5	
543-9840-002	5-2 172	1	
543-9840-002	5-2 184	1	
543-9840-002	5-2 300	1	
543-9840-002	5-2 392	4	
543-9840-002	5-2 492	3	
543-9840-002	5-14 85	1	
543-9840-002	5-14 96	1	
543-9840-002	5-15 40	1	
543-9840-002	5-15 124	2	
543-9840-002	5-15 225	3	
543-9845-002	5-2 400	1	
543-9845-002	5-15 132	1	
543-9847-002	5-2 405	1	
543-9847-002	5-15 137	1	
543-9848-002	5-2 271	4	
543-9848-002	5-2 283	1	
543-9848-002	5-2 291	2	
543-9848-002	5-15 11	4	
543-9848-002	5-15 25	2	
543-9848-002	5-15 32	2	
543-9849-002	5-2 403	1	
543-9849-002	5-15 135	1	
543-9850-002	5-12 12	1	

PART NUMBER	FIG. - ITEM	TTL REQ	AIRLINE PART NO.
543-9851-002	5-2 408	1	
543-9851-002	5-15 140	1	
543-9855-002	5-2 459	1	
543-9856-002	5-2 144	1	
543-9856-002	5-14 17	1	
543-9857-002	5-2 106	2	
543-9857-002	5-14 105	2	
543-9858-002	5-2 173	1	
543-9858-002	5-14 86	1	
543-9860-002	5-2 299	1	
543-9860-002	5-15 39	1	
543-9861-002	5-2 318	2	
543-9861-002	5-15 59	1	
543-9865-002	5-2 187	1	
543-9865-002	5-14 100	1	
543-9866-002	5-2 285	1	
543-9866-002	5-15 27	1	
543-9867-002	5-2 66	1	
543-9867-002	5-13 31	1	
543-9868-002	5-13 30	1	
543-9869-002	5-2 420	1	
543-9869-002	5-15 152	1	
543-9870-002	5-2 406	1	
543-9870-002	5-15 138	1	
543-9871-002	5-2 401	1	
543-9871-002	5-15 133	1	
543-9876-002	5-2 179	1	
543-9876-002	5-14 92	1	
543-9878-002	5-2 162	1	
543-9878-002	5-14 75	1	
543-9880-002	5-2 118	1	
543-9880-002	5-14 120	1	
543-9881-002	5-2 480	1	
543-9881-002	5-15 212	1	
543-9882-002	5-2 126	2	
543-9882-002	5-14 10	1	
543-9882-002	5-14 10A	1	
543-9884-002	5-2 177	1	
543-9884-002	5-14 90	1	
543-9886-002	5-2 482	1	
543-9886-002	5-15 214	1	
543-9887-002	5-2 362	1	
543-9887-002	5-15 94	1	
543-9888-002	5-2 413	1	
543-9891-002	5-2 416	1	
543-9891-002	5-15 148	1	
543-9892-002	5-2 426	1	
543-9892-002	5-15 159	1	
543-9893-002	5-2 185	1	
543-9893-002	5-14 97	1	
543-9896-002	5-2 114	6	
543-9896-002	5-14 116	6	
543-9903-002	5-2 180	1	
543-9903-002	5-14 93	1	
543-9905-002	5-2 382	1	
543-9905-002	5-2 429	1	
543-9905-002	5-15 114	1	
543-9905-002	5-15 163	1	
543-9906-002	5-2 449	1	
543-9906-002	5-15 185	1	

PART NUMBER	FIG. - ITEM	TTL REQ	AIRLINE PART NO.
543-9907-002	5-2 365	1	
543-9907-002	5-15 97	1	
543-9908-002	5-2 174	1	
543-9908-002	5-14 87	1	
543-9914-002	5-15 49	1	
543-9916-002	5-2 444	1	
543-9916-002	5-15 179	1	
543-9918-002	5-2 448	1	
543-9918-002	5-15 183	1	
543-9921-002	5-2 422	1	
543-9921-002	5-15 154	1	
543-9929-002	5-2 147	1	
543-9929-002	5-14 21	1	
543-9930-002	5-2 146	1	
543-9930-002	5-14 20	1	
543-9931-002	5-2 440	1	
543-9931-002	5-15 175	1	
543-9932-002	5-2 439	1	
543-9932-002	5-15 173	1	
543-9933-002	5-2 442	1	
543-9933-002	5-15 177	1	
543-9937-002	5-2 112	6	
543-9937-002	5-14 114	6	
543-9938-002	5-2 423	1	
543-9938-002	5-15 155	1	
543-9939-002	5-2 425	1	
543-9939-002	5-15 157	1	
543-9940-002	5-2 424	1	
543-9940-002	5-15 156	1	
543-9941-002	5-2 454	1	
543-9942-002	5-2 166	1	
543-9942-002	5-14 79	1	
543-9943-002	5-2 418	1	
543-9943-002	5-15 150	1	
543-9948-002	5-2 323	1	
543-9948-002	5-15 64	1	
543-9949-002	5-2 396	1	
543-9949-002	5-15 128	1	
543-9950-002	5-2 402	1	
543-9950-002	5-15 134	1	
543-9951-002	5-2 397	1	
543-9951-002	5-15 129	1	
543-9952-002	5-2 412	1	
543-9952-002	5-15 144	1	
543-9953-002	5-2 407	1	
543-9953-002	5-15 139	1	
543-9955-002	5-2 487	2	
543-9955-002	5-15 219	2	
543-9956-002	5-2 276	1	
543-9956-002	5-15 19	1	
543-9957-002	5-2 325	1	
543-9957-002	5-2 381	1	
543-9957-002	5-15 66	1	
543-9957-002	5-15 113	1	
543-9958-002	5-15 51	1	
543-9959-002	5-2 292	2	
543-9959-002	5-15 33	2	
543-9963-002	5-15 47	1	
543-9965-002	5-2 302	1	
543-9965-002	5-15 42	1	

PART NUMBER	FIG. - ITEM	TTL REQ	AIRLINE PART NO.
543-9967-002	5-2 56	1	
543-9967-002	5-13 23	1	
543-9969-002	5-2 157	1	
543-9969-002	5-14 29	1	
543-9970-002	5-2 445	1	
543-9970-002	5-15 180	1	
543-9971-002	5-2 59	1	
543-9971-002	5-2 61	1	
543-9971-002	5-13 26	2	
543-9972-002	5-2 133	3	
543-9972-002	5-14 14	1	
543-9972-002	5-14 14A	2	
543-9973-002	5-2 85	1	
543-9973-002	5-13 49	1	
543-9974-002	5-2 186	1	
543-9974-002	5-14 98	1	
543-9980-002	5-2 437	1	
543-9980-002	5-15 171	1	
543-9981-002	5-15 17	1	
543-9982-002	5-2 45	1	
543-9982-002	5-13 5	1	
543-9983-002	5-2 110	1	
543-9983-002	5-14 112	1	
543-9985-002	5-2 359	2	
543-9985-002	5-15 91	2	
543-9986-002	5-2 260	2	
543-9986-002	5-15 5	2	
543-9987-002	5-2 259	2	
543-9987-002	5-2 314	4	
543-9987-002	5-2 358	2	
543-9987-002	5-2 379	2	
543-9987-002	5-15 3	2	
543-9987-002	5-15 55	4	
543-9987-002	5-15 90	2	
543-9987-002	5-15 111	2	
543-9990-002	5-15 45	1	
543-9993-002	5-2 410	1	
543-9993-002	5-15 142	1	
543-9994-002	5-2 457	1	
543-9994-002	5-15 198	1	
543-9997-002	5-2 97	1	
543-9997-002	5-14 7	1	
544-0003-002	5-2 432	1	
544-0003-002	5-15 165	1	
544-0008-002	5-2 456	1	
544-0008-002	5-15 200	1	
544-0009-002	5-2 371	1	
544-0009-002	5-15 103	1	
544-0010-002	5-2 374	1	
544-0010-002	5-15 106	1	
544-0011-002	5-2 366	1	
544-0011-002	5-15 98	1	
544-0012-002	5-2 398	1	
544-0012-002	5-15 130	1	
544-0022-002	5-2 385	1	
544-0022-002	5-15 117	1	
544-0028-002	5-2 154	1	
544-0028-002	5-14 28	1	
544-0029-002	5-2 156	1	
544-0032-002	5-2 435	1	

PART NUMBER	FIG. - ITEM	TTL REQ	AIRLINE PART NO.
544-0032-002	5-15 169	1	
544-0035-002	5-2 434	1	
544-0035-002	5-15 167	1	
544-0036-002	5-2 446	1	
544-0036-002	5-15 181	1	
544-0043-002	5-2 256U	1	
544-0043-002	5-2 265	1	
544-0043-002	5-2 277	1	
544-0043-002	5-15 9	3	
544-0043-002	5-15 20	2	
544-0044-002	5-2 383	1	
544-0044-002	5-15 115	1	
544-0046-002	5-2 430	1	
544-0046-002	5-15 164	1	
544-0047-002	5-2 136	1	
544-0047-002	5-13 14	1	
544-0049-002	5-2 151	1	
544-0049-002	5-14 24	1	
544-0050-002	5-2 155	2	
544-0051-002	5-2 93	1	
544-0052-002	5-2 87B	1	
544-0052-002	5-13 57	1	
544-0053-002	5-2 89	1	
544-0053-002	5-13 63	1	
544-0054-002	5-2 153	1	
544-0054-002	5-14 27	4	
544-0056-002	5-2 270	3	
544-0056-002	5-15 13	3	
544-0057-002	5-2 90	1	
544-0061-002	5-2 82	1	
544-0061-002	5-13 45	1	
544-0063-002	5-2 145	1	
544-0063-002	5-14 19A	1	
544-0065-002	5-2 139	1	
544-0065-002	5-13 19	1	
544-0066-002	5-2 393	1	
544-0066-002	5-15 125	1	
544-0068-002	5-2 47	1	
544-0068-002	5-13 6	1	
544-0077-002	5-2 467	1	
544-0077-002	5-15 190	1	
544-0079-002	5-2 326	1	
544-0079-002	5-15 67	1	
544-0080-002	5-2 414	1	
544-0080-002	5-15 146	1	
544-0081-002	5-2 81	1	
544-0082-002	5-2 79	1	
544-0083-002	5-2 75	1	
544-0084-002	5-2 77	1	
544-0085-002	5-2 74	1	
544-0085-002	5-13 44	1	
544-0087-002	5-2 69	1	
544-0087-002	5-13 34	1	
544-0090-002	5-2 137	1	
544-0090-002	5-2 336	4	
544-0090-002	5-13 15	1	
544-0091-002	5-2 322	1	
544-0091-002	5-2 484	4	
544-0091-002	5-15 63	1	
544-0091-002	5-15 216	4	

PART NUMBER	FIG. - ITEM	TTL REQ	AIRLINE PART NO.
544-0094-002	5-15 22	1	
544-0094-002	5-15 36	1	
544-0096-002	5-2 338	3	
544-0096-002	5-15 77	3	
544-0097-002	5-2 330	1	
544-0097-002	5-15 71	1	
544-0099-002	5-2 14	1	
544-0099-002	5-12 16	1	
544-0102-002	5-2 332	1	
544-0102-002	5-15 73	1	
544-0103-002	5-2 335	1	
544-0103-002	5-15 76	1	
544-0104-002	5-12 15	1	
544-0106-000	5-2 36	1	
544-0106-000	5-13 13	1	
544-0110-003	5-12 29	1	
544-0112-003	5-2 242	1	
544-0112-003	5-14 72	1	
544-0113-003	5-2 301	1	
544-0113-003	5-15 41	1	
544-0114-003	5-15 8	1	
544-0116-003	5-2 218	1	
544-0116-003	5-14 57	1	
544-0117-003	5-2 159	1	
544-0117-003	5-14 73	1	
544-0120-003	5-12 28	1	
544-0122-003	5-2 1	1	
544-0122-003	5-12 1	1	
544-0127-004	5-2 99	1	
544-0127-004	5-14 102	1	
544-0128-002	5-2 387	1	
544-0128-004	5-15 119	1	
544-0129-002	5-2 489	1	
544-0129-004	5-15 221	1	
544-0130-004	5-2 394	1	
544-0130-004	5-15 126	1	
544-0131-004	5-2 493	1	
544-0131-004	5-15 227	1	
544-0132-004	5-2 125	1	
544-0132-004	5-14 127	1	
544-0133-004	5-2 38	1	
544-0133-004	5-11 6	1	
544-0133-004	5-13	REF	
544-0134-005	5-11 12	1	
544-0134-005	5-15	REF	
544-0135-005	5-12 46	1	
544-0136-005	5-12 40	1	
544-0137-005	5-2 95	1	
544-0138-005	5-2 35	1	
544-0138-005	5-3	REF	
544-0138-005	5-11 3	1	
544-0139-002	5-10 2	4	
544-0139-002	5-10 3	8	
544-0140-003	5-10 5	1	
544-0141-005	5-10 13	1	
544-0143-003	5-3 1	1	
544-0209-002	5-5 6	1	
544-0623-002	5-2 225	1	
544-0623-002	5-14 58	1	
544-0655-002	5-2 237	4	

PART NUMBER	FIG. - ITEM	TTL REQ	AIRLINE PART NO.
544-0655-002	5-14 65	4	
544-0667-002	5-2 212	1	
544-0667-002	5-14 39	1	
544-0683-002	5-2 235	1	
544-0684-002	5-2 231	1	
544-0685-002	5-2 234	4	
544-0694-002	5-2 189	1	
544-0694-002	5-14 34	1	
544-0695-002	5-2 190	1	
544-0695-002	5-14 35	1	
544-0727-003	5-2 236	1	
544-0760-003	5-14 6	1	
544-0795-002	5-2 364	2	
544-0795-002	5-15 96	2	
544-2549-000	5-3 7	1	
544-2549-000	5-3 7A	1	
544-2567-000	5-3 34	1	
54402567-000	5-3 34A	1	
544-2567-002	5-3 7A	1	
544-2567-002	5-3 34	1	
544-2607-002	5-12 39	5	
544-2608-002	5-12 35	1	
544-2666-002	5-15 202	1	
544-2667-002	5-2 243	1	
544-2667-002	5-11 10	1	
544-2668-002	5-2 246	1	
544-2668-002	5-14 56	1	
544-2669-002	5-2 222	1	
544-2670-002	5-2 219	1	
544-2670-002	5-14 66	1	
544-2671-002	5-15 206	1	
544-2673-003	5-15 209	1	
544-2676-002	5-2 469	1	
544-2678-002	5-2 196	1	
544-2678-002	5-14 48	1	
544-2679-002	5-2 206	1	
544-2679-002	5-14 49	1	
544-2680-002	5-2 207	1	
544-2680-002	5-14 50	1	
544-2681-002	5-2 208	1	
544-2681-002	5-14 51	1	
544-2682-002	5-2 197	1	
544-2682-002	5-2 209	1	
544-2682-002	5-14 54	2	
544-2683-002	5-2 204	1	
544-2683-002	5-14 44	1	
544-2684-002	5-2 203	1	
544-2684-002	5-14 43	1	
544-2685-002	5-2 202	1	
544-2685-002	5-14 45	1	
544-2686-002	5-2 194	1	
544-2686-002	5-14 46	1	
544-2687-002	5-2 211	1	
544-2687-002	5-14 52	1	
544-2688-002	5-2 228	1	
544-2688-002	5-14 63	1	
544-2689-002	5-2 223	1	
544-2689-002	5-14 70	1	
544-2692-003	5-2 195	1	
544-2692-003	5-2 198	3	

PART NUMBER	FIG. - ITEM	TTL REQ	AIRLINE PART NO.
544-2692-003	5-14 47	4	
544-2693-003	5-2 188	1	
544-2693-003	5-14 33	1	
544-6110-002	5-5 39B	3	
544-6111-002	5-5 66	4	
544-6119-002	5-5 39A	3	
544-7050-002	5-5 64A	2	
544-9060-002	5-7 57	1	
544-9201-002	5-8 1	1	
544-9265-002	5-3 3A	1	
544-9464-002	5-15 145	1	
544-9565-002	5-7 59	1	
544-9566-002	5-7 59A	1	
544-9798-003	5-9 1	1	
545-2785-002	5-6 44	1	
545-2786-002	5-6 53	1	
545-6165-005	5-9 18	1	
545-7506-003	5-3 26	6	
545-7544-003	5-7A 21	1	
545-7544-003	5-7A 27	2	
545-7546-003	5-2 274	4	
545-7546-003	5-2 329	1	
545-7546-003	5-2 368	1	
545-7546-003	5-2 373	1	
545-7546-003	5-15 10	4	
545-7546-003	5-15 70	1	
545-7546-003	5-15 100	1	
545-7546-003	5-15 105	1	
545-7546-003	5-15 108	1	
546-0338-002	5-2 29	12	
546-0338-002	5-12 43	12	
546-3305-004	5-2 96	1	
546-3305-004	5-14 6	1	
546-3343-005	5-2 31	1	
546-3343-005	5-12 46	1	
546-3344-005	5-2 25	1	
546-3344-005	5-12	1	
546-3346-003	5-2 19	1	
546-3346-003	5-12 28	1	
546-3458-002	5-2 96A	1	
546-3458-002	5-14 1	1	
546-7852-005	5-7 3	1	
546-7852-005	5-7 3	1	
546-7960-003	5-7 62C	1	
546-7962-004	5-7 37	1	
546-7962-004	5-7 37	1	
547-1397-002	5-7 62	1	
547-3773-003	5-2 352	1	
547-3773-003	5-15 87	1	
548-1337-002	5-2 342	1	
548-1337-002	5-15 81	1	
548-4006-002	5-2 16	1	
548-4007-002	5-2 256D	1	
548-4008-002	5-2 256C	2	
548-4011-002	5-2 13	1	
548-4012-002	5-2 6	1	
548-4014-003	5-2 256A	1	
548-4015-003	5-2 256R	1	
548-4017-004	5-2 256Q	1	
548-4020-005	5-2 256	1	

PART NUMBER	FIG. - ITEM	TTL REQ	AIRLINE PART NO.
548-4027-003	5-2 264	1	
548-4040-003	5-6 37	1	
548-5323-002	5-6 88	1	
548-5325-002	5-6 20	1	
548-5326-002	5-4 6	1	
548-5328-003	5-5 45	1	
548-5329-003	5-6 24	1	
548-5330-004	5-6 46	1	
548-5392-000	5-5	1	
548-5395-002	5-6 28	1	
548-5396-003	5-5 51	1	
548-5398-006	5-4 2	1	
548-5398-006	5-4 7	1	
548-5398-006	5-5	REF	
548-5400-003	5-6 70	1	
548-8041-002	5-2 415	1	
548-8041-002	5-15 147	1	
548-8045-002	5-2 32	1	
548-8258-002	5-12 4	1	
548-9353-000	5-7 32	1	
549-0267-002	5-7 2A	1	
549-0267-002	5-7 2A	1	
55-2178-39	5-3 28	1	
55-2178-39	5-3 28A	1	
55-6530-39	5-3 28A	1	
553-4440-003	5-2 65	1	
553-4440-003	5-13 30	1	
553-5005-003	5-2 334	2	
553-5005-003	5-15 75	2	
553-5674-002	5-2 164	1	
553-5674-002	5-14 77	1	
553-5760-003	5-2 141	1	
553-5760-003	5-14 31	1	
553-7180-003	5-2 94A	1	
553-7180-003	5-13 65	1	
553-9829-002	5-2 380	2	
553-9829-002	5-15 112	2	
553-9830-002	5-2 315	2	
553-9830-002	5-15 56	2	
554-3962-001	5-7A 13	1	
554-3971-001	5-7A 35	1	
554-3972-001	5-7B 52	1	
554-3974-001	5-7A 1	1	
554-3975-001	5-7A 18	1	
5687WA	5-8 8	1	
6-32X1-8 4SPLINEOVP T18-8SST	5-2 178	2	
6-32X1-8 4SPLINEOVP T18-8SST	5-14 91	2	
6DJ8-6DJ8GB	5-8 8	1	
665-53-129	5-2 452	1	
665-53-129	5-15 188	1	
67321-0-122	5-2 120	1	
67321-0-122	5-14 122	1	
67321-0-212	5-2 122	1	
67321-0-212	5-14 124	1	
68-1660-26	5-2 258	2	
68-1660-26	5-5 64B	2	
68-1660-26	5-5 94	2	
68-1660-26	5-6 35	3	

PART NUMBER	FIG. - ITEM	TTL REQ	AIRLINE PART NO.
68-1660-26	5-7A 14	2	
68-1660-26	5-7A 32	1	
68-1660-26	5-9 1	2	
68-1660-26	5-15 2	2	
68-1660-40	5-6 49	2	
68-1660-40	5-7A 23	1	
68-1660-40	5-9 3	4	
68NC1-40	5-5 49	4	
68NM40	5-5 43	3	
68NM40	5-5 97	1	
68NM62	5-9 19	4	
68NM62	5-9 20	4	
68NM62	5-9 21	2	
69SM12C	5-6 10	3	
7490-0189	5-8 9	1	
756-4721-003	5-2 471	4	
756-4721-003	5-15 210	4	
757-3557-001	5-7A 19	1	
757-3558-001	5-7A 33	1	
757-3559-001	5-7A 15	1	
757-3559-001	5-7B	REF	
757-3560-001	5-7B 47	1	
757-3561-001	5-7A 9	1	
757-3562-001	5-7A 16	1	
763F28	5-7 24	1	
763F96	5-7 42	1	
845-014X5V0503Z	5-2 256Y	2	
854-20N	5-3 18	1	
88-0749-02-704	5-9 3	2	
8980-2 1-2	5-6 61	2	
8980-2 1-2	5-6 65	2	
8980-2 1-4	5-6 52	2	
8980-2 1-8	5-6 50	2	
8980-2 1-8	5-6 59	2	
8980-2 3-8	5-6 63	2	
911	5-5 29	1	
926H4	5-2 253	1	
926H4	5-11 5	1	
94H3200	5-3 38	1	
94554	5-6 30	2	
9779-2	5-12 10	1	
997F14	5-7B 4	1	
998-0026-000	5-2 241	1	
998-0026-000	5-14 71	1	

PART NUMBER	FIG. - ITEM	TTL REQ	AIRLINE PART NO.

5.3 SYMBOL INDEX

SYMBOL	FIG. - ITEM		PART NUMBER
1B1	5-2	452	665-53-129
1B1	5-15	188	665-53-129
1B4	5-2	104	A0-15497-2
1B4	5-14	103	A0-15497-2
1C1	5-2	463	USLS-465
1C1	5-15	193	USLS-465
1C2	5-14	108	P96852
1C2	5-2	109	P96852
1C3	5-2	109	P96852
1C3	5-14	109	P96852
1C4	5-2	109	P96852
1C4	5-14	110	P96852
1C5	5-2	109	P96852
1C5	5-14	111	P96852
1C6	5-13	52	2465-009W5T0102P
1C6	5-2	87A	2465-009W5T0102P
1C7	5-2	87A	2465-009W5T0102P
1C7	5-13	53	2465-009WTT0102P
1C8	5-2	87A	2465-009W5T0102P
1C8	5-13	54	2465-009W5T0102P
1C9	5-2	87A	2465-009W5T0102P
1C9	5-13	55	2465-009W5T0102P
1C10	5-2	87A	2465-009W5T0102P
1C10	5-12	56	2465-009W5T0102P
1C11	5-13	38	HTS17-3000Z
1C11	5-2	73	HTS17-3000Z
1C12	5-2	73	HTS17-3000Z
1C12	5-13	39	HTS17-3000Z
1C13	5-2	73	HTS17-3000Z
1C13	5-13	40	HTS17-3000Z
1C14	5-2	73	HTS17-3000Z
1C14	5-13	41	HTS17-3000Z
1C15	5-2	73	HTS17-3000Z
1C15	5-13	42	HTS17-3000Z
1C16	5-2	73	HTS17-3000Z
1C16	5-13	43	HTS17-3000Z
1C17,1C18	5-2	256Y	845-014X5V0503Z
1C19	5-2	256K	HPA42N470-231K
1E2-1E4	5-2	116	2A1DB12
1E5,1E6	5-2	348	4D4A12
1J1	5-2	51	SMRE7SG
1J1	5-13	10	SMRE7SG
1J1	5-13	10	MM7-22SGDSS
1J2	5-2	55	33-90
1J2	5-13	21	33-90
1J3	5-2	37	PB07C18-32P
1J3	5-13	20	PB07C18-32P
1J4	5-2	49	MS90273-705A
1J4	5-13	8	MS90273-705A
1J5	5-12	15	544-0104-002
1K1	5-2	340	RB3-26D737
1K1	5-15	79	RB3-26D737
1L1	5-2	241	998-0026-000
1L1	5-14	71	998-0026-000
1L2	5-2	88	18-124
1L3	5-2	88	18-124
1L3	5-13	59	18-124
1L4	5-2	88	18-124
1L4	5-13	60	18-124
1L5	5-2	88	18-124
1L5	5-13	61	18-124
1L6	5-2	88	18-124
1L6	5-13	62	18-124
1L7-1L12	5-2	256J	MS90539-08
1L13	5-2	256H	4422-11-117
1L2	5-13	58	18-124
1MG2,1MG3	5-2	450	RS806-1B
1MG2,1MG3	5-15	186	RS806-1B
1P1	5-2	332	544-0102-002
1P1	5-15	73	544-0102-002
1RT1	5-2	252	NE2
1RT1	5-11	7	NE2
1R1	5-2	255	RC32GF104K
1R1	5-14	101	RC32GF104K
1R2	5-15	18	DCH2HV805-20
1S1	5-15	81	548-1337-002
1S3	5-2	302	543-9965-002
1S3	5-15	42	543-9965-002
1S4	5-2	257	190907A
1S4	5-15	1	190907A
1S5	5-2	356	190908A
1S5	5-15	88	190908A
1S7	5-2	312	190910A
1S7	5-15	53	190910A
1S10	5-2	311	190909A
1S10	5-15	52	190909A
1S12	5-2	122	67321-0-212
1S12	5-14	124	67321-0-212
1S13	5-2	120	67321-0-122
1S13	5-14	122	67321-0-122
1S14	5-2	377	190909A
1S14	5-15	109	190909A
1TB1	5-2	94	178-2015
1TB1	5-2	256A	548-4014-003
1TB1	5-13	64	178-2015
1TB2	5-13	45	544-0061-002
1TB3	5-2	81	544-0081-002
1TB3	5-2	93	544-0051-002
1A1	5-2	35	544-0138-005
1A1	5-3		544-0138-005
1A1	5-11	3	544-0138-005
1A1CR1	5-3	7	544-2549-000
1A1CR1	5-3	7	1N914
1A1CR2	5-3	7A	544-2549-000
1A1CR2	5-3	7A	544-2567-002
1A1CR3	5-3	7A	544-2549-000
1A1CR3	5-3	7A	544-2567-002
1A1CR4	5-3	34	544-2567-000
1A1CR4	5-3	34	544-2567-002
1A1CR5	5-3	34	544-2567-000
1A1CR5	5-3	34	544-2567-002
1A1CR6	5-3	34A	544-2567-000
1A1CR7	5-3	34A	544-2567-000
1A1C1-	5-3	11	CK14AX103M
1A1C4	5-3	11	CK14AX103M
1A1C5	5-3	18	854-20N
1A1C6	5-3	33	CV11C450
1A1C7	5-3	8	22H5T51EG
1A1C8	5-3	11	CK14AX103M
1A1C9	5-3	32	M72-500VDC500MFD5PCT
1A1C10-	5-3	15	CK14AX103M
1A1C12	5-3	15	CK14AX103M
1A1J1	5-3	38	543-5695-002
1A1J1	5-3	38	94H3200
1A1J2	5-3	36	UG290AU
1A1L1	5-3	9	DM0073
1A1L2	5-3	14	DM0073
1A1L3	5-3	9	DM0073

SYMBOL	FIG. - ITEM		PART NUMBER
1A1P1	5-3	21	543-5672-002
1A1P2	5-3	3	MM7-22P
1A1R1	5-3	5	RC32GF330K
1A1R1	5-3	5	RC32GF270K
1A1R2	5-3	6	RN65D1212F
1A1R3	5-3	6	RN65D1212F
1A1R4	5-3	10	RC20GF391K
1A1R5	5-3	16	RC20GF102K
1A1R6	5-3	17	RN65D1102F
1A1R7	5-3	17A	RN65D1102F
1A1R7	5-3	17A	RN65D7681F
1A1R8	5-3	35	RV5LAXSB102B
1A1R10	5-3	34A	RN60D5620F
1A1R11	5-3	34A	RN60D5620F
1A1TB1	5-3	4	543-5690-002
1A1T1, 1A1T2	5-3	25	543-5682-002
2B1	5-5	10	A0-14599A
2B1	5-5	10	VIHKE8-2C
2C1-2C50	5-5	52	2856005X5U0102P
2C51	5-5	26	P36713
2C52-2C60	5-5	80	CK14AX103M
2C61	5-5	100	CL37BD160MN3
2C62,2C63	5-5	54A	CK63AW103M
2J1-2J4	5-5	17	100B3000C75
2J5	5-5	18	PB02A16-26P
2J6-2J8	5-5	39	143-006-01
2J9	5-5	64	DAH15P0021A158
2J10,2J11	5-5	65	143-012-01
2J20	5-5	1	PB02A18-32P
2K1	5-5	36	26SM12P
2K2	5-5	93	3SAE2057A2
2L1-2L7	5-5	54	18-1117
2L8	5-5	53	543-6217-002
2L9-2L13	5-5	54	18-1117
2L14	5-5	53	543-6217-002
2L15,2L16	5-5	54	18-1117
2L17	5-5	53	543-6217-002
2L18	5-5	54	18-1117
2L20-2L22	5-5	54	18-1117
2L23, 2L2	5-5	53	543-6217-002
2L25	5-5	54	18-1117
2L26,2L27	5-5	81	DM0073
2R1,2R2	5-5	84	RN65D1213F
2R3	5-5	85	RN65D1962F
2R4	5-5	79	RC32GF103K
2R6	5-5	77	RN65D2611F
2R7	5-5	75	RN65D8251F
2R8	5-5	76	RN65D2151F
2R9	5-5	85	RN65D1962F
2R10	5-5	79	RC32GF103K
2R11	5-5	86	RN65D4640F
2R12	5-5	87	RN65D3830F
2R13	5-5	83	RN65D1621F
2R14	5-5	82	RN65D3161F
2R15	5-5	88	RN65D1102F
2R16	5-5	89	RN65D9091F
2R17	5-5	91	RN65D4222F
2R18	5-5	90	RN65D1471F
2R19	5-5	92	RN65D6811F
2T1	5-5	56	543-7318-002
2A1	5-4	4	522-1002-004
2A1	5-8		522-1002-004
2A1CR1	5-8	31	1N647
2A1C3	5-8	25	196P47304S4
2A1C4	5-8	14	CL24BQ250SP3
2A1C5	5-8	15	CL24BQ130SP3
2A1C6	5-8	35	CK14AX103M
2A1C6	5-8	35	150D154X0035A2
2A1C7	5-8	34	HTS17-3000Z
2A1C8	5-8	28	196P68302S4
2A1C9	5-8	35A	CK14AX103M
2A1C9	5-8	35A	150D154X0035A2
2A1E1	5-8	7	541-6554-005
2A1L1	5-8	32	LT4K036
2A1L2	5-8	32A	LT4K036
2A1L3	5-8	29	DM0073
2A1L4	5-8	27	BS217
2A1R1	5-8	38	RN65D3830F
2A1R2	5-8	30	RS2C40R00J
2A1R2	5-8	30	RW69V221
2A1R3	5-8	26	535-301
2A1R4	5-8	33	RC20GF104K
2A1R5	5-8	36	RC20GF560K
2A1R5	5-8	36	RC20GF151K
2A1R6	5-8	36A	RC20GF560K
2A1R6	5-8	36A	RC20GF151K
2A1R7	5-8	37	RN65D2610F
2A1R8	5-8	33A	RC20GF104K
2A1R9	5-8	29	RC32GF272K
2A1R10	5-8	27	RC32GF272K
2A1R11	5-8	13A	RW69V180
2A1T1	5-8	16	27680
2A1T1	5-8	16	38822
2A1T2	5-8	18	543-7318-002
2A1V1	5-8	8	12DJ8
2A1V1	5-8	8	5687WA
2A1V1	5-8	8	6DJ8-6DJ8GB
2A1XV1	5-8	9	7490-0189
2A2	5-4	4	522-1002-004
2A2	5-8		522-1002-004
2A2CR1	5-8	31	1N647
2A2C3	5-8	25	196P47304S4
2A2C4	5-8	14	CL24BQ250SP3
2A2C5	5-8	15	CL24BQ130SP3
2A2C6	5-8	35	CK14AX103M
2A2C6	5-8	35	150D154X0035A2
2A2C7	5-8	34	HTS17-3000Z
2A2C8	5-8	28	196P68302S4
2A2C9	5-8	35A	CK14AX103M
2A2C9	5-8	35A	150D154X0035A2
2A2E1	5-8	7	541-6554-005
2A2L1	5-8	32	LT4K036
2A2L2	5-8	32A	LT4K036
2A2L3	5-8	29	DM0073
2A2L4	5-8	27	BS217
2A2R1	5-8	38	RN65D3830F
2A2R2	5-8	30	RS2C40R00J
2A2R2	5-8	30	RW69V221
2A2R3	5-8	26	535-301
2A2R4	5-8	33	RC20GF104K
2A2R5	5-8	36	RC20GF560K
2A2R5	5-8	36	RC20GF151K
2A2R6	5-8	36A	RC20GF560K
2A2R6	5-8	36A	RC20GF151K
2A2R7	5-8	37	RN65D2610F
2A2R8	5-8	33A	RC20GF104K
2A2R9	5-8	29	RC32GF272K
2A2R10	5-8	27	RC32GF272K

SYMBOL	FIG. - ITEM	PART NUMBER
2A2R11	5-8 13A	RW69V180
2A2T1	5-8 16	27680
2A2T1	5-8 16	38822
2A2T2	5-8 18	543-7318-002
2A2V1	5-8 8	12DJ8
2A2V1	5-8 8	5687WA
2A2V1	5-8 8	6DJ8-6DJ8GB
2A2XV1	5-8 9	7490-0189
2A3	5-3 39	543-5694-002
2A3	5-8	522-1002-004
2A3CR1	5-8 31	1N647
2A3C3	5-8 25	196P47304S4
2A3C4	5-8 14	CL24BQ250SP3
2A3C5	5-8 15	CL24BQ130SP3
2A3C6	5-8 35	CK14AX103M
2A3C6	5-8 35	150D154X0035A2
2A3C7	5-8 34	HTS17-3000Z
2A3C8	5-8 28	196P68302S4
2A3C9	5-8 35A	CK14AX103M
2A3C9	5-8 35A	150D154X0035A2
2A3E1	5-8 7	541-6554-005
2A3L1	5-8 32	LT4K036
2A3L2	5-8 32A	LT4K036
2A3L3	5-8 29	DM0073
2A3L4	5-8 27	BS217
2A3R1	5-8 38	RN65D3830F
2A3R2	5-8 30	RS2C40R00J
2A3R2	5-8 30	RW69V221
2A3R3	5-8 26	535-301
2A3R4	5-8 33	RC20GF104K
2A3R5	5-8 36	RC20GF560K
2A3R5	5-8 36	RC20GF151K
2A3R6	5-8 36A	RC20GF560K
2A3R6	5-8 36A	RC20GF151K
2A3R7	5-8 37	RN65D2610F
2A3R8	5-8 33A	RC20GF104K
2A3R9	5-8 29	RC32GF272K
2A3R10	5-8 27	RC32GF272K
2A3R11	5-8 13A	RW69V180
2A3T1	5-8 16	27680
2A3T1	5-8 16	38822
2A3T2	5-8 18	543-7318-002
2A3V1	5-8 8	12DJ8
2A3V1	5-8 8	5687WA
2A3V1	5-8 8	6DJ8-6DJ8GB
2A3XV1	5-8 9	7490-0189
2A4	5-4 5	543-3461-004
2A4	5-4 5	528-0023-005
2A4	5-4 5	543-3461-004
2A4	5-4 5	528-0023-005
2A4	5-4 5	528-0531-001
2A4	5-7	543-3461-004
2A4	5-7	528-0023-005
2A4	5-7A	528-0531-001
2A4CR1	5-7 6	1N461
2A4CR1	5-7B 24	1N461
2A4CR2	5-7 6A	1N461
2A4CR2	5-7B 23	1N461
2A4CR3	5-7 6B	1N461
2A4CR3	5-7B 3	1N461
2A4CR4	5-7 5	1N647
2A4CR4	5-7 5	1N647
2A4CR4	5-7 5	1N647
2A4CR4	5-7B 39	1N647

SYMBOL	FIG. - ITEM	PART NUMBER
2A4CR5	5-7 5A	1N647
2A4CR5	5-7 5A	1N647
2A4CR5	5-7 5A	1N647
2A4CR5	5-7B 41	1N647
2A4CR6	5-7 5B	1N647
2A4CR6	5-7 5B	1N647
2A4CR6	5-7 5B	1N647
2A4CR6	5-7B 38	1N647
2A4CR7	5-7 5C	1N647
2A4CR7	5-7 5C	1N647
2A4CR7	5-7 5C	1N647
2A4CR7	5-7B 40	1N647
2A4CR8	5-7 35	1N270
2A4CR8	5-7B 32	1N270
2A4CR9	5-7 50B	1N914
2A4CR9	5-7A 28A	1N914
2A4CR10	5-7 50C	1N914
2A4CR10	5-7A 28B	1N914
2A4CR11	5-7B 44	1N965B
2A4C2	5-7 36	196P68392S4
2A4C2	5-7B 46	196P68392S4
2A4C3	5-7 14	DA049-123B
2A4C3	5-7 14	DA049-123B
2A4C3	5-7B 19	CT10-103K
2A4C4	5-7 15	CL23CH2R5TN3
2A4C4	5-7B 14	CL23CH2R5TN3
2A4C4	5-7B 14	150D224X0035A2
2A4C5	5-7 10	CL21CH4R5TP3
2A4C5	5-7B 43	CL21CH4R5TP3
2A4C6	5-7 31	CL21CH180TP3
2A4C6	5-7B 44	150D476X0035S2
2A4C7	5-7 28	196P10301S4
2A4C7	5-7B 7	CT10-103K
2A4C8	5-7 15A	CL23CH2R5TN3
2A4C8	5-7B 45	CL23CH2R5TN3
2A4C9	5-7 33	CL21CK080TP3
2A4C9	5-7B 35	CL21CK080TP3
2A4C10	5-7 25	CL21CJ030TP3
2A4C10	5-7B 31	CL21CJ030TP3
2A4C11	5-7 26	CL23CN0R5SN3
2A4C11	5-7B 1	CL31CN0R5MP3
2A4C12	5-7 26A	CL23CN0R5SN3
2A4C12	5-7B 28	CL31CN0R5MP3
2A4C13	5-7 15B	CL23CH2R5TN3
2A4C13	5-7B 18	CL23CH2R5TN3
2A4C14	5-7 50	DA049-123B
2A4C14	5-7A 24	CK14AX103M
2A4C15	5-7 40	150D105X0035A2
2A4C15	5-7 40	CL33CH0R8MN3
2A4C15	5-7B 37	CL33CH0R8MN3
2A4C16	5-7 50A	CK14AX103M
2A4C16	5-7B 13	CK13AX472M
2A4C17	5-7A 20A	40C73A1
2A4C18	5-7A 24A	CK14AX103M
2A4G1	5-7 46	302-22
2A4G1	5-7A 6	302-22
2A4J1	5-7 4B	SKT2BC
2A4J1-	5-7B 48	SKT41WHT
2A4J2	5-7 4C	SKT2BC
2A4J3	5-7 4D	SKT2BC
2A4J3	5-7B 48	SKT41WHT
2A4L1	5-7 32	DM0073
2A4L1	5-7 32	548-9353-000
2A4L1	5-7B 16	WEE560

SYMBOL	FIG. - ITEM	PART NUMBER
2A4MR1	5-7 38	526-6500-000
2A4MR1	5-7A 4	526-6500-000
2A4P1	5-7A 12	MD612S
2A4Q1	5-7 9	2N1150
2A4Q1	5-7B 11	2N697
2A4Q2	5-7 9A	2N1150
2A4Q2	5-7B 9	2N697
2A4Q3	5-7 9B	2N1150
2A4Q3	5-7B 2	2N697
2A4Q4	5-7 52	2N1156
2A4Q4	5-7A 26	2N1893
2A4Q5	5-7 52A	2N1156
2A4Q5	5-7A 25	2N1893
2A4Q6	5-7 53	2N1445
2A4Q6	5-7A 20	2N1445
2A4RT1	5-7 24	763F28
2A4RT1	5-7B 4	997F14
2A4RT2	5-7 42	763F96
2A4R1	5-7 57	544-9060-002
2A4R1	5-7A 23	HM4721
2A4R2	5-7 17	RN60D1002F
2A4R2	5-7B 17	RN60D1002F
2A4R3	5-7 13	RC20GF184K
2A4R3	5-7B 12	RC07GF474K
2A4R4	5-7 12	RC20GF102K
2A4R4	5-7B 10	RC07GF102K
2A4R5	5-7 43	G2666
2A4R5	5-7A 8	G2666
2A4R6	5-7 7	RC20GF124K
2A4R6	5-7B 6	RC07GF274K
2A4R7	5-7 16	RC20GF473K
2A4R7	5-7B 21	RC20GF473K
2A4R7	5-7B 21	RC20GF103K
2A4R8	5-7 20	RC32GF223K
2A4R8	5-7B 20	RC32GF223K
2A4R10	5-7 19	RC20GF392K
2A4R10	5-7B 36	RC07GF392K
2A4R11	5-7 21	RC20GF153K
2A4R11	5-7B 25	RC07GF153K
2A4R12	5-7 23	RC20GF272K
2A4R12	5-7B 5	RC07GF272K
2A4R13	5-7 49	RC20GF623J
2A4R13	5-7 49	RC20GF683J
2A4R13	5-7 49	RC20GF753J
2A4R13	5-7 49	RC20GF823J
2A4R13	5-7 49	RC20GF913J
2A4R13	5-7 49	RC20GF104J
2A4R13	5-7 49	RC20GF114J
2A4R13	5-7 49	RC20GF124J
2A4R13	5-7 49	RC20GF134J
2A4R13	5-7 49	RC20GF154J
2A4R13	5-7 49	RC20GF164J
2A4R13	5-7 49	RC20GF184J
2A4R13	5-7 49	RC20GF204J
2A4R13	5-7 49	RC20GF224J
2A4R13	5-7 49	RC20GF244J
2A4R13	5-7 49	RC20GF274J
2A4R13	5-7 49A	RC20GF302J
2A4R13	5-7 49A	RC20GF332J
2A4R13	5-7 49A	RC20GF362J
2A4R13	5-7 49A	RC20GF392J
2A4R13	5-7 49A	RC20GF432J

SYMBOL	FIG. - ITEM	PART NUMBER
2A4R13	5-7 49A	RC20GF472J
2A4R13	5-7 &49	ARC20GF512J
2A4R13	5-7 49A	RC20GF512J
2A4R13	5-7 49A	RC20GF622J
2A4R13	5-7 49A	RC20GF682J
2A4R13	5-7 49A	RC20GF752J
2A4R13	5-7 49A	RC20GF822J
2A4R13	5-7 49A	RC20GF912J
2A4R13	5-7 49A	RC20GF103J
2A4R13	5-7 49A	RC20GF113J
2A4R13	5-7 49A	RC20GF123J
2A4R13	5-7 49A	RC20GF133J
2A4R13	5-7 49A	RC20GF153J
2A4R13	5-7 49A	RC20GF163J
2A4R13	5-7 49A	RC20GF183J
2A4R13	5-7 49A	RC20GF203J
2A4R13	5-7 49A	RC20GF223J
2A4R13	5-7 49A	RC20GF243J
2A4R13	5-7 49A	RC20GF273J
2A4R13	5-7 49A	RC20GF303J
2A4R13	5-7 49A	RC20GF333J
2A4R13	5-7A 28	RC07GF623J
2A4R13	5-7A 28	RC07GF683J
2A4R13	5-7A 28	RC07GF753J
2A4R13	5-7A 28	RC07GF823J
2A4R13	5-7A 28	RC07GF913J
2A4R13	5-7A 28	RC07GF104J
2A4R13	5-7A 28	RC07GF114J
2A4R13	5-7A 28	RC07GF124J
2A4R13	5-7A 28	RC07GF134J
2A4R13	5-7A 28	RC07GF154J
2A4R13	5-7A 28	RC07GF164J
2A4R13	5-7A 28	RC07GF184J
2A4R13	5-7A 28	RC07GF204J
2A4R13	5-7A 28	RC07GF224J
2A4R13	5-7A 28	RC07GF244J
2A4R13	5-7A 28	RC07GF274J
2A4R13	5-7A 28	RC07GF304J
2A4R13	5-7A 28	RC07GF334J
2A4R14	5-7 49A	RC20GF302J
2A4R14	5-7 49A	RC20GF332J
2A4R14	5-7 49A	RC20GF362J
2A4R14	5-7 49A	RC20GF392J
2A4R14	5-7 49A	RC20GF432J
2A4R14	5-7 49A	RC20GF472J
2A4R14	5-7 &49	ARC20GF512J
2A4R14	5-7 49A	RC20GF512J
2A4R14	5-7 49A	RC20GF622J
2A4R14	5-7 49A	RC20GF682J
2A4R14	5-7 49A	RC20GF752J
2A4R14	5-7 49A	RC20GF822J
2A4R14	5-7 49A	RC20GF912J
2A4R14	5-7 49A	RC20GF103J
2A4R14	5-7 49A	RC20GF113J
2A4R14	5-7 49A	RC20GF123J
2A4R14	5-7 49A	RC20GF133J
2A4R14	5-7 49A	RC20GF153J
2A4R14	5-7 49A	RC20GF163J
2A4R14	5-7 49A	RC20GF183J
2A4R14	5-7 49A	RC20GF203J
2A4R14	5-7 49A	RC20GF223J
2A4R14	5-7 49A	RC20GF243J

SYMBOL	FIG. - ITEM		PART NUMBER
2A4R14	5-7	49A	RC20GF273J
2A4R14	5-7	49A	RC20GF303J
2A4R14	5-7	49A	RC20GF333J
2A4R15	5-7	8	RC20GF332K
2A4R15	5-7B	22	RC07GF332K
2A4R16	5-7	22	RC32GF682K
2A4R16	5-7B	30	RC32GF682K
2A4R17	5-7	44	G3249
2A4R17	5-7A	7	G3249
2A4R18	5-7	34	RC42GF102K
2A4R18	5-7B	15	RC42GF102K
2A4R19	5-7	27	RC32GF472K
2A4R19	5-7B	33	RC32GF472K
2A4R20	5-7	27A	RC32GF472K
2A4R20	5-7B	26	RC32GF472K
2A4R21	5-7	18	RC20GF104K
2A4R21	5-7B	27	RC07GF104K
2A4R22	5-7	11	RC20GF222K
2A4R22	5-7B	8	RC07GF222K
2A4R23	5-7	19A	RC20GF392K
2A4R23	5-7B	29	RC07GF392K
2A4R25	5-7	51	RC20GF100K
2A4R25	5-7A	22	RC20GF100K
2A4R26	5-7	41	RC20GF333K
2A4R26	5-7B	42	RC07GF183K
2A4TB1	5-7B		757-3559-001
2A4T1	5-7	39	28950
2A4T1	5-7A	5	28950
2A5	5-4	5	543-3461-004
2A5	5-4	5	528-0023-005
2A5	5-4	5	543-3461-004
2A5	5-4	5	528-0023-005
2A5	5-4	5	528-0531-001
2A5	5-7		543-3461-004
2A5	5-7		528-0023-005
2A5	5-7A		528-0531-001
2A5CR1	5-7	6	1N461
2A5CR1	5-7B	24	1N461
2A5CR2	5-7	6A	1N461
2A5CR2	5-7B	23	1N461
2A5CR3	5-7	6B	1N461
2A5CR3	5-7B	3	1N461
2A5CR4	5-7	5	1N647
2A5CR4	5-7	5	1N647
2A5CR4	5-7	5	1N647
2A5CR4	5-7B	39	1N647
2A5CR5	5-7	5A	1N647
2A5CR5	5-7	5A	1N647
2A5CR5	5-7	5A	1N647
2A5CR5	5-7B	41	1N647
2A5CR6	5-7	5B	1N647
2A5CR6	5-7	5B	1N647
2A5CR6	5-7	5B	1N647
2A5CR6	5-7B	38	1N647
2A5CR7	5-7	5C	1N647
2A5CR7	5-7	5C	1N647
2A5CR7	5-7	5C	1N647
2A5CR7	5-7B	40	1N647
2A5CR8	5-7	35	1N270
2A5CR8	5-7B	32	1N270
2A5CR9	5-7	50B	1N914
2A5CR9	5-7A	28A	1N914

SYMBOL	FIG. - ITEM		PART NUMBER
2A5CR10	5-7	50C	1N914
2A5CR10	5-7A	28B	1N914
2A5CR11	5-7B	44	1N965B
2A5C2	5-7	36	196P68392S4
2A5C2	5-7B	46	196P68392S4
2A5C3	5-7	14	DA049-123B
2A5C3	5-7	14	DA049-123B
2A5C3	5-7B	19	CT10-103K
2A5C4	5-7	15	CL23CH2R5TN3
2A5C4	5-7B	14	CL23CH2R5TN3
2A5C4	5-7B	14	150D224X0035A2
2A5C5	5-7	10	CL21CH4R5TP3
2A5C5	5-7B	43	CL21CH4R5TP3
2A5C6	5-7	31	CL21CH180TP3
2A5C6	5-7B	44	150D476X0035S2
2A5C7	5-7	28	196P10301S4
2A5C7	5-7B	7	CT10-103K
2A5C8	5-7	15A	CL23CH2R5TN3
2A5C8	5-7B	45	CL23CH2R5TN3
2A5C9	5-7	33	CL21CK080TP3
2A5C9	5-7B	35	CL21CK080TP3
2A5C10	5-7	25	CL21CJ030TP3
2A5C10	5-7B	31	CL21CJ030TP3
2A5C11	5-7	26	CL23CN0R5SN3
2A5C11	5-7B	1	CL31CN0R5MP3
2A5C12	5-7	26A	CL23CN0R5SN3
2A5C12	5-7B	28	CL31CN0R5MP3
2A5C13	5-7	15B	CL23CH2R5TN3
2A5C13	5-7B	18	CL23CH2R5TN3
2A5C14	5-7	50	DA049-123B
2A5C14	5-7A	24	CK14AX103M
2A5C15	5-7	40	150D105X0035A2
2A5C15	5-7	40	CL33CH0R8MN3
2A5C15	5-7B	37	CL33CH0R8MN3
2A5C16	5-7	50A	CK14AX103M
2A5C16	5-7B	13	CK13AX472M
2A5C17	5-7A	20A	40C73A1
2A5C18	5-7A	24A	CK14AX103M
2A5G1	5-7	46	302-22
2A5G1	5-7A	6	302-22
2A5J1	5-7	4B	SKT2BC
2A5J1-	5-7B	48	SKT41WHT
2A5J2	5-7	4C	SKT2BC
2A5J3	5-7B	48	SKT41WHT
2A5J3	5-7	4D	SKT2BC
2A5L1	5-7	32	DM0073
2A5L1	5-7	32	548-9353-000
2A5L1	5-7B	16	WEE560
2A5MR1	5-7	38	526-6500-000
2A5MR1	5-7A	4	526-6500-000
2A5Q1	5-7	9	2N1150
2A5Q1	5-7B	11	2N697
2A5Q2	5-7	9A	2N1150
2A5Q2	5-7B	9	2N697
2A5Q3	5-7	9B	2N1150
2A5Q3	5-7B	2	2N697
2A5Q4	5-7	52	2N1156
2A5Q4	5-7A	26	2N1893
2A5Q5	5-7	52A	2N1156
2A5Q5	5-7A	25	2N1893
2A5Q6	5-7	53	2N1445
2A5Q6	5-7A	20	2N1445

SYMBOL	FIG. - ITEM		PART NUMBER
2A5RT1	5-7	24	763F28
2A5RT1	5-7B	4	997F14
2A5RT2	5-7	42	763F96
2A5R1	5-7A	23	HM4721
2A5R2	5-7	17	RN60D1002F
2A5R2	5-7B	17	RN60D1002F
2A5R3	5-7	13	RC20GF184K
2A5R3	5-7B	12	RC07GF474K
2A5R4	5-7	12	RC20GF102K
2A5R4	5-7B	10	RC07GF102K
2A5R5	5-7	43	G2666
2A5R5	5-7A	8	G2666
2A5R6	5-7	7	RC20GF124K
2A5R6	5-7B	6	RC07GF274K
2A5R7	5-7	16	RC20GF473K
2A5R7	5-7B	21	RC20GF473K
2A5R7	5-7B	21	RC20GF103K
2A5R8	5-7	20	RC32GF223K
2A5R8	5-7B	20	RC32GF223K
2A5R10	5-7	19	RC20GF392K
2A5R10	5-7B	36	RC07GF392K
2A5R11	5-7	21	RC20GF153K
2A5R11	5-7B	25	RC07GF153K
2A5R12	5-7	23	RC20GF272K
2A5R12	5-7B	5	RC07GF272K
2A5R13	5-7	49A	RC20GF302J
2A5R13	5-7	49A	RC20GF332J
2A5R13	5-7	49A	RC20GF362J
2A5R13	5-7	49A	RC20GF392J
2A5R13	5-7	49A	RC20GF432J
2A5R13	5-7	49A	RC20GF472J
2A5R13	5-7	&49	ARC20GF512
2A5R13	5-7	49A	RC20GF512J
2A5R13	5-7	49A	RC20GF622J
2A5R13	5-7	49A	RC20GF682J
2A5R13	5-7	49A	RC20GF752J
2A5R13	5-7	49A	RC20GF822J
2A5R13	5-7	49A	RC20GF912J
2A5R13	5-7	49A	RC20GF103J
2A5R13	5-7	49A	RC20GF113J
2A5R13	5-7	49A	RC20GF123J
2A5R13	5-7	49A	RC20GF133J
2A5R13	5-7	49A	RC20GF153J
2A5R13	5-7	49A	RC20GF163J
2A5R13	5-7	49A	RC20GF183J
2A5R13	5-7	49A	RC20GF203J
2A5R13	5-7	49A	RC20GF223J
2A5R13	5-7	49A	RC20GF243J
2A5R13	5-7	49A	RC20GF273J
2A5R13	5-7	49A	RC20GF303J
2A5R13	5-7	49A	RC20GF333J
2A5R13	5-7	49	RC20GF623J
2A5R13	5-7	49	RC20GF683J
2A5R13	5-7	49	RC20GF753J
2A5R13	5-7	49	RC20GF823J
2A5R13	5-7	49	RC20GF913J
2A5R13	5-7	49	RC20GF104J
2A5R13	5-7	49	RC20GF114J
2A5R13	5-7	49	RC20GF124J
2A5R13	5-7	49	RC20GF134J
2A5R13	5-7	49	RC20GF154J
2A5R13	5-7	49	RC20GF164J

SYMBOL	FIG. - ITEM		PART NUMBER
2A5R13	5-7	49	RC20GF184J
2A5R13	5-7	49	RC20GF204J
2A5R13	5-7	49	RC20GF224J
2A5R13	5-7	49	RC20GF244J
2A5R13	5-7	49	RC20GF274J
2A5R13	5-7A	28	RC07GF623J
2A5R13	5-7A	28	RC07GF683J
2A5R13	5-7A	28	RC07GF753J
2A5R13	5-7A	28	RC07GF823J
2A5R13	5-7A	28	RC07GF913J
2A5R13	5-7A	28	RC07GF104J
2A5R13	5-7A	28	RC07GF114J
2A5R13	5-7A	28	RC07GF124J
2A5R13	5-7A	28	RC07GF134J
2A5R13	5-7A	28	RC07GF154J
2A5R13	5-7A	28	RC07GF164J
2A5R13	5-7A	28	RC07GF184J
2A5R13	5-7A	28	RC07GF204J
2A5R13	5-7A	28	RC07GF224J
2A5R13	5-7A	28	RC07GF244J
2A5R13	5-7A	28	RC07GF274J
2A5R13	5-7A	28	RC07GF304J
2A5R13	5-7A	28	RC07GF334J
2A5R14	5-7	49A	RC20GF302J
2A5R14	5-7	49A	RC20GF332J
2A5R14	5-7	49A	RC20GF362J
2A5R14	5-7	49A	RC20GF392J
2A5R14	5-7	49A	RC20GF432J
2A5R14	5-7	49A	RC20GF472J
2A5R14	5-7	&49	ARC20GF512
2A5R14	5-7	49A	RC20GF512J
2A5R14	5-7	49A	RC20GF622J
2A5R14	5-7	49A	RC20GF682J
2A5R14	5-7	49A	RC20GF752J
2A5R14	5-7	49A	RC20GF822J
2A5R14	5-7	49A	RC20GF912J
2A5R14	5-7	49A	RC20GF103J
2A5R14	5-7	49A	RC20GF113J
2A5R14	5-7	49A	RC20GF123J
2A5R14	5-7	49A	RC20GF133J
2A5R14	5-7	49A	RC20GF153J
2A5R14	5-7	49A	RC20GF163J
2A5R14	5-7	49A	RC20GF183J
2A5R14	5-7	49A	RC20GF203J
2A5R14	5-7	49A	RC20GF223J
2A5R14	5-7	49A	RC20GF243J
2A5R14	5-7	49A	RC20GF273J
2A5R14	5-7	49A	RC20GF303J
2A5R14	5-7	49A	RC20GF333J
2A5R15	5-7	8	RC20GF332K
2A5R15	5-7B	22	RC07GF332K
2A5R16	5-7	22	RC32GF682K
2A5R16	5-7B	30	RC32GF682K
2A5R17	5-7	44	G3249
2A5R17	5-7A	7	G3249
2A5R18	5-7B	15	RC42GF102K
2A5R19	5-7	27	RC32GF472K
2A5R19	5-7	34	RC42GF102K
2A5R19	5-7B	33	RC32GF472K
2A5R20	5-7	27A	RC32GF472K
2A5R20	5-7B	26	RC32GF472K
2A5R21	5-7	18	RC20GF104K

SYMBOL	FIG. - ITEM	PART NUMBER
2A5R21	5-7B 27	RC07GF104K
2A5R22	5-7 11	RC20GF222K
2A5R22	5-7B 8	RC07GF222K
2A5R23	5-7 19A	RC20GF392K
2A5R23	5-7B 29	RC07GF392K
2A5R25	5-7 51	RC20GF100K
2A5R25	5-7A 22	RC20GF100K
2A5R26	5-7 41	RC20GF333K
2A5R26	5-7B 42	RC07GF183K
2A5TB1	5-7B	757-3559-001
2A5T1	5-7 39	28950
2A5T1	5-7A 5	28950
2A6	5-4 3	528-0154-005
2A6	5-6	528-0154-005
2A6B1	5-6 39	43A159
2A6B1	5-6 39	43A159
2A6CR1	5-6 29	1N458
2A6CR2	5-6 29	1N458
2A6CR3-	5-6 26	1N1095
2A6CR5	5-6 26	1N1095
2A6CR3-	5-6 26	1N4005
2A6CR5	5-6 26	1N4005
2A6CR6	5-6 29	1N458
2A6CR7	5-6 26	1N1095
2A6CR7	5-6 26	1N4005
2A6CR8	5-6 29	1N458
2A6CR9	5-6 26	1N1095
2A6CR9	5-6 26	1N4005
2A6CR10	5-6 26	1N1095
2A6CR10	5-6 26	1N4005
2A6CR11	5-6 48	1N1095
2A6CR11	5-6 48	1N4004
2A6CR12-	5-6 29	1N458
2A6CR15	5-6 29	1N458
2A6C1	5-6 27	CL25BN080SP3
2A6C2	5-6 27	CL25BN080SP3
2A6K1,	5-6 77	515951
2A6K2		
2A6K3	5-6 72	FR120SN0-115
2A6K4-	5-6 10	69SM12C
2A6K6	5-6 10	69SM12C
2A6K7	5-6 9	26SM12P
2A6K7	5-6 9	26SM12AR
2A6K8	5-6 4	GT2839
2A6K9	5-6 31	3S2791FB100KOC
2A6K10,	5-6 30	94554
2A6K11		
2A6P1	5-6 83	DD50P
2A6R1	5-6 29A	RW69V681
2A6R2	5-6 23	RS5-41510ROH
2A6R2	5-6 23	RS5141560ROH
2A6R2	5-6 23	RS5-41620ROH
2A6R2	5-6 23	RS5-41680ROH
2A6R2	5-6 23	RS5-41750ROH
2A6R2	5-6 23	RS5-830ROG
2A6R2	5-6 23	RS5-41910ROH
2A6R2	5-6 23	RS5-10000G
2A6R2	5-6 23	RSM5-450H
2A6R3	5-6 23	RS5-41510ROH
2A6R3	5-6 23	RS5141560ROH
2A6R3	5-6 23	RS5-41620ROH
2A6R3	5-6 23	RS5-41680ROH

SYMBOL	FIG. - ITEM	PART NUMBER
2A6R3	5-6 23	RS5-41750ROH
2A6R3	5-6 23	RS5-830ROG
2A6R3	5-6 23	RS5-41910ROH
2A6R3	5-6 23	RS5-10000G
2A6R3	5-6 23	RSM5-450H
2A6R4	5-6 25	RC20GF220K
2A6R7	5-6 22	RSM2-121ROG
2A6R7	5-6 22	RSM2-133ROG
2A6R7	5-6 22	RSM2-150ROG
2A6R7	5-6 22	RSM2-162ROG
2A6R7	5-6 22	RSM2-178ROG
2A6R7	5-6 22	RSM2-196ROG
2A6R7	5-6 22	RSM2-215ROG
2A6R7	5-6 22	RSM2-237ROG
2A6R7	5-6 22	RSM2-261ROG
2A6R7	5-6 22	RSM2-287ROG
2A6R7	5-6 22	RSM2-316ROG
2A6R7	5-6 22	RSM2-348ROG
2A6R7	5-6 22	RSM2-383ROG
2A6R7	5-6 22	RSM2-422ROG
2A6R7	5-6 22	RSM2-464ROG
2A6R7	5-6 22	RSM2-511ROG
2A6R8	5-6 22	RSM2-121ROG
2A6R8	5-6 22	RSM2-133ROG
2A6R8	5-6 22	RSM2-150ROG
2A6R8	5-6 22	RSM2-162ROG
2A6R8	5-6 22	RSM2-178ROG
2A6R8	5-6 22	RSM2-196ROG
2A6R8	5-6 22	RSM2-215ROG
2A6R8	5-6 22	RSM2-237ROG
2A6R8	5-6 22	RSM2-261ROG
2A6R8	5-6 22	RSM2-287ROG
2A6R8	5-6 22	RSM2-316ROG
2A6R8	5-6 22	RSM2-348ROG
2A6R8	5-6 22	RSM2-383ROG
2A6R8	5-6 22	RSM2-422ROG
2A6R8	5-6 22	RSM2-464ROG
2A6R8	5-6 22	RSM2-511ROG
2A6S1	5-6 51	210644F
2A6S1	5-6 51	264672F
2A6S2	5-6 60	183313F
2A6S3	5-6 62	183314F
2A6S4	5-6 64	183315F
2A6S5	5-6 66	222491F

5.4 PARTS LIST

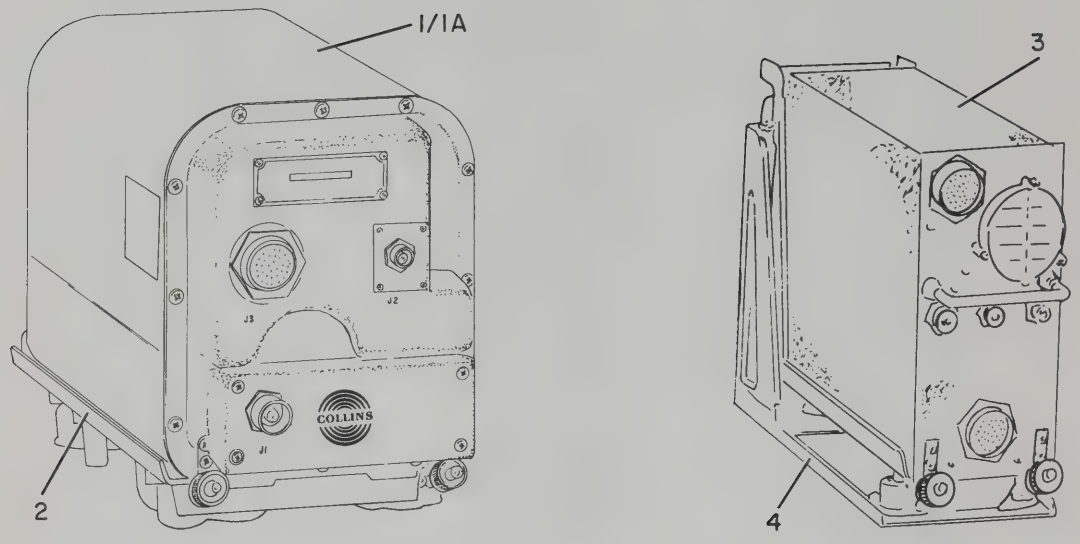


Figure 5-1. 180R-6/6A Antenna Coupler and 309A-2E Antenna Coupler Control.

FIG. - ITEM	PART NO.	INDENT.	NOMENCLATURE	UNITS PER ASSY.	USAGE CODE
5-1	NO NUMBER	1	180R-6/6A ANTENNA COUPLER AND 309A-2E ANTENNA COUPLER CONTROL	1	
1	522-0998-005	2	180R-6 ANTENNA COUPLER 1 SEE FIG. 5-11	1	
1A	522-2473-005	2	180R-6A ANTENNA COUPLER SEE FIG. 5-2	1	
2	522-0999-002	2	SCREW, MACH. SEE FIG. 5-10	1	
R 3	522-2474-004	2	309A-2E ANTENNA COUPLER CONTROL SEE FIG. 5-4	1	
4	522-1076-004	2	349N-1 MOUNTING SEE FIG. 5-9	1	

GROUP ASSEMBLY PARTS LIST

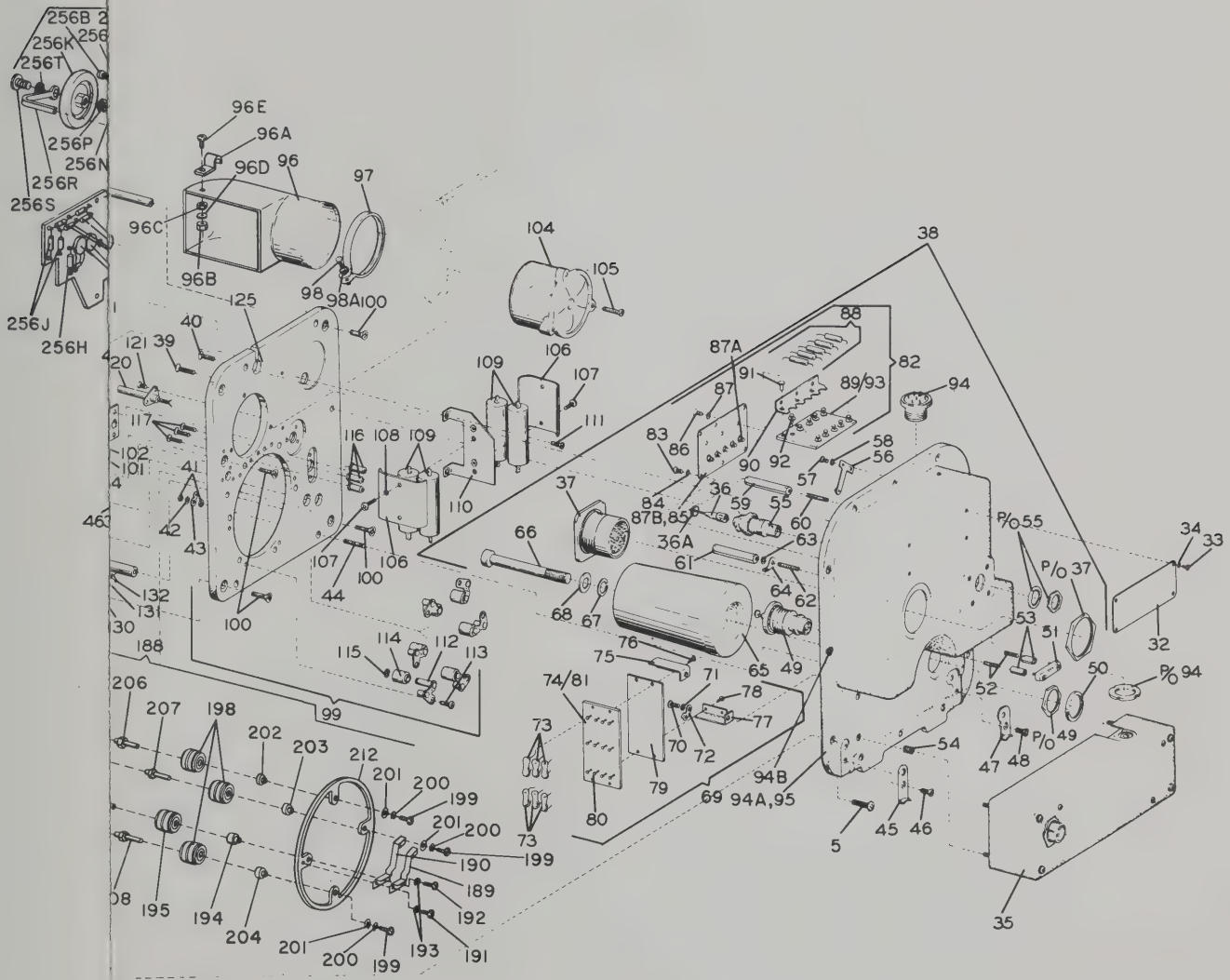


Figure 5-2. 180R-6A Antenna Coupler.

5.4 PARTS LIST

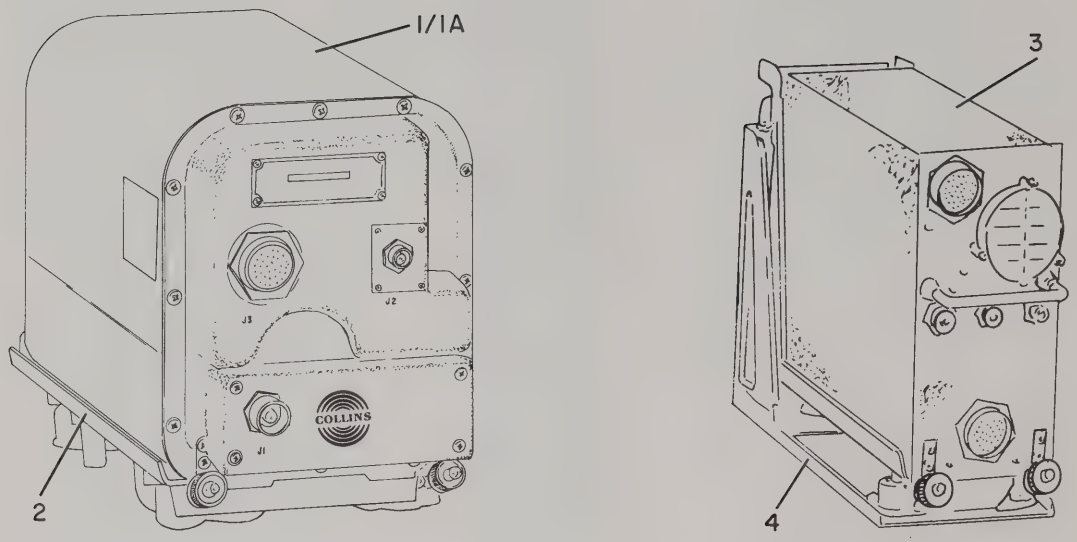


Figure 5-1. 180R-6/6A Antenna Coupler and 309A-2E Antenna Coupler Control.

FIG. - ITEM	PART NO.	INDENT.	NOMENCLATURE	UNITS PER ASSY.	USAGE CODE
5-1	NO NUMBER	1	180R-6/6A ANTENNA COUPLER AND 309A-2E ANTENNA COUPLER CONTROL	1	
1	522-0998-005	2	180R-6 ANTENNA COUPLER 1 SEE FIG. 5-11	1	
1A	522-2473-005	2	180R-6A ANTENNA COUPLER SEE FIG. 5-2	1	
2	522-0999-002	2	SCREW, MACH. SEE FIG. 5-10	1	
R 3	522-2474-004	2	309A-2E ANTENNA COUPLER CONTROL SEE FIG. 5-4	1	
4	522-1076-004	2	349N-1 MOUNTING SEE FIG. 5-9	1	

GROUP ASSEMBLY PARTS LIST

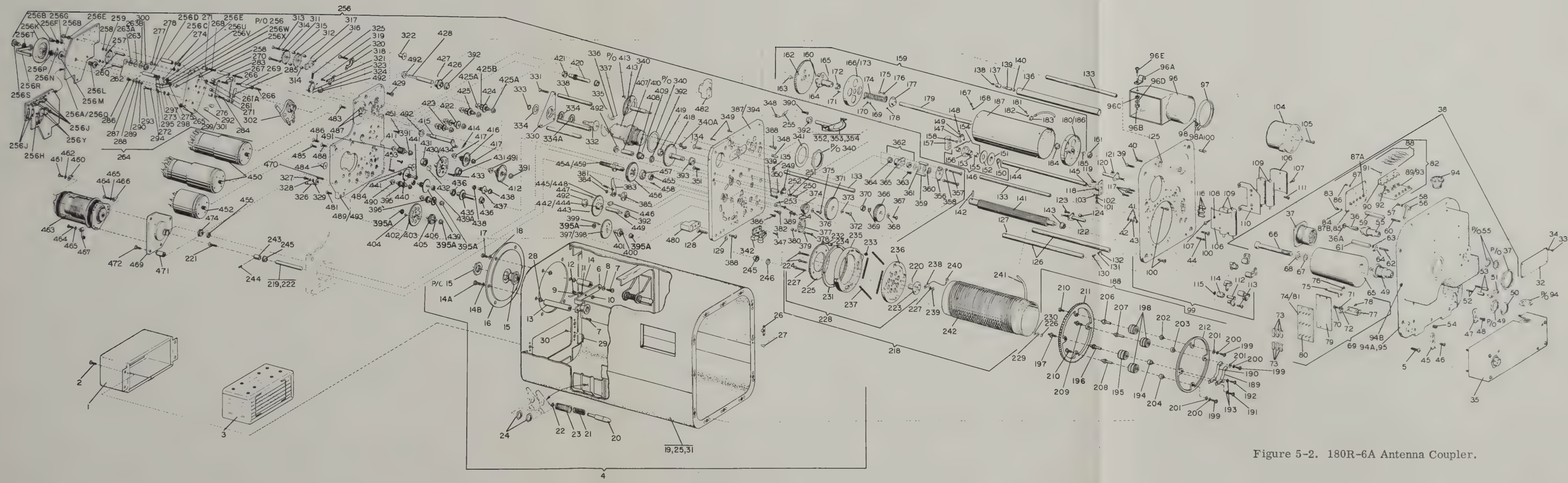


Figure 5-2. 180R-6A Antenna Coupler.

	FIG. - ITEM	PART NO.	INDENT.	NOMENCLATURE	UNITS PER ASSY.	USAGE CODE
	5-2	522-2473-005	1	180R-6A ANTENNA COUPLER SEE FIG. 5-1-1A FOR NHA	REF	
	1	544-0122-003	2	NEST, FIL	1	
R	2	MS51957-43	2	SCREW, MACH., SST, PAN HD, 8-32 X 3/8 343-0187-000 AP	4	
	3	A10001	2	FILTER 21585 009-0003-000	1	
	4	NO NUMBER	2	CASE ASSY	1	
R	5	P347-0054-00 0	2	SCREW, MACH., SST, FIL H, 8-32 X 5/8 77250 347-0054-000 AP	12	
	6	548-4012-002	3	BUS BAR	1	
R	7	MS51957-14	3	SCREW, MACH., SST, PAN HD, 4-40 X 5/16 343-0134-000 AP	2	
	8	310-0396-000	3	WASHER, LOCK, BRZ, 0.115 ID, 0.202 OD COML AP	2	
	9	2104-04-01-2 520N	3	TERMINAL 78189 304-0317-000	1	
	10	P313-0051-00 0	3	NUT, PLAIN, HEX., NI PL BRS, 4-40 77250 313-0051-000 AP	1	
	11	310-0396-000	3	WASHER, LOCK, BRZ, 0.115 ID, 0.202 OD COML AP	1	
	12	P343-0285-00 0	3	SCREW, MACH., NI PL BRS, PAN HD, 4-40 X 1/4 77250 343-0285-000 AP	1	
	13	548-4011-002	3	POST, H-V	1	
	14	544-0099-002	3	POST, H-V	1	
	14A	P343-0334-00 0	3	SCREW, MACH., NI PL BRS, PAN HD, 6-32 X 3/4 77250 343-0334-000 AP	2	
	14B	310-0055-000	3	WASHER, FLAT, NI PL BRS, 0.147 ID, 0.312 OD COML AP	2	
	15	UG569AU	3	CONNECTOR 357-9130-000	1	
	16	548-4006-002	3	COVER, ANT. COUPLER	1	
R	17	P343-0331-00 0	3	SCREW, MACH., NI PL BRS, PAN HD, 6-32 X 7/16 77250 343-0331-000 AP	4	
	18	310-0055-000	3	WASHER, FLAT, NI PL BRS, 0.147 ID, 0.312 OD COML AP	4	
	19	546-3346-003	3	CASE ASSY	1	
	20	543-9826-002	4	PIN, LOCATING	2	
	21	543-9828-002	4	SPRING, PIN	2	
	22	MS16624-18	4	RING 340-0004-000 AP	2	
	23	543-9827-002	4	BUSHING, LOCATING PIN	2	
	24	P334-0272-00 0	4	NUT, PLAIN, HEX., SST, 7/16-28 77250 334-0272-000 AP	2	
	25	546-3344-005	4	CASE, FABRICATED	1	
	26	K1913-08	5	NUT, SELF-LKG, PLAIN, CAD. PL STL, 8-32 75237 334-1034-000	4	
	27	MS20426AD3-4	5	RIVET, SOLID, AL, 3/32 DIA X 1/4 LG SHK 305-1362-000 AP	8	
	28	K7000-06-6	5	NUT, SELF-LKG, CLINCH, CAD. PL STL, 6-32 75237 334-1045-000	6	
	29	546-0338-002	5	NUT, ANCHOR	12	
	30	MS20426AD3-6	5	RIVET, SOLID, AL, 3/32 DIA X 3/8 LG SHK 305-1364-000 AP	24	
	31	546-3343-005	5	CASE, FABRICATED	1	
	32	548-8045-002	2	PLATE, IDENT	1	
	33	MS51957-1	2	SCREW, MACH., SST, PAN HD, 2-56 X 1/8 343-0122-000 AP	4	
	34	310-0070-000	2	WASHER, LOCK, SST, 0.097 ID, 0.165 OD COML AP	4	

	FIG. - ITEM	PART NO.	INDENT.	NOMENCLATURE		UNITS PER ASSY.	USAGE CODE
	5-2 35	544-0138-005	2	LOADING DISCRIMINATOR SEE FIG. 5-3	1A1	1	
	36	544-0106-000	2	CABLE ASSY		1	
R	36A	1011HOTTINNED	3	TERMINAL 77147 304-0114-000		1	
	37	PB07C18-32P	2	CONNECTOR 77820 371-1005-000	1J3	1	
	38	544-0133-004	2	COVER ASSY, FRONT		1	
	39	P343-0310-000	2	SCREW, MACH., NI PL BRS, PAN HD, 8-32 X 7/16 77250 343-0310-000 AP		3	
	40	MS51959-44	2	SCREW, MACH., SST, FH, 8-32 X 7/16 342-0079-000 AP		2	
	41	P313-0054-000	2	NUT, PLAIN, HEX., NI PL BRS, 8-32 77250 313-0054-000 AP		2	
	42	310-0397-000	2	WASHER, LOCK, BRZ, 0.168 ID, 0.280 OD COML AP		1	
R	43	2017-10HOTTINNED	2	TERMINAL 77147 304-0202-000 AP		1	
	44	P312-3060-000	2	STUD, CONTINUOUS THD, CAD. PL BRS, 8-32 X 7/8 77250 312-3060-000 AP		1	
	45	543-9982-002	3	ANGLE, MOUNT		1	
	46	MS51959-26	3	SCREW, MACH., SST, FH, 6-32 X 1/4 342-0060-000 AP		2	
	47	544-0068-002	3	ANGLE, MOUNT		1	
	48	MS51959-26	3	SCREW, MACH., SST, FH, 6-32 X 1/4 342-0060-000 AP		1	
	49	MS90273-705A	3	CONNECTOR 357-9356-000	1J4	1	
	50	543-9838-002	3	NUT, PLAIN AP		1	
	51	SMRE7SG	3	CONNECTOR 81312 372-1698-000	1J1	1	
	52	P312-3450-000	3	STUD, CONTINUOUS THD, CAD. PL BRS, 2-56 X 3/8 77250 312-3450-000 AP		2	
	53	540-9006-003	3	POST, ELECTRICAL-MECHANICAL EQUIP. AP		2	
	54	MS122118	3	INSERT 012-1609-000		4	
	55	33-90	3	ADAPTER 98278 357-9335-000	1J2	1	
	56	543-9967-002	3	STRIP, GROUND		1	
	57	P343-0297-000	3	SCREW, MACH., NI PL BRS, PAN HD, 2-56 X 1/8 77250 343-0297-000 AP		2	
	58	310-0074-000	3	WASHER, LOCK, BRZ, 0.088 ID, 0.175 OD COML AP		2	
	59	543-9971-002	3	POST		1	
	60	P312-0097-000	3	STUD, CONTINUOUS THD, SST, 8-32 X 3/4 77250 312-0097-000 AP		1	
	61	543-9971-002	3	POST		1	
	62	P312-0097-000	3	STUD, CONTINUOUS THD, SST, 8-32 X 3/4 77250 312-0097-000 AP		1	
	63	MS35338-137	3	WASHER, LOCK, SST, 0.168 ID, 0.280 OD 310-0283-000 AP		1	
	64	2014-10HOTTINNED	3	TERMINAL 77147 304-1800-000 AP		1	
	65	553-4440-003	3	CORE, IRON		1	
	66	543-9867-002	3	SCREW, CORE AP		1	
	67	310-0402-000	3	WASHER, LOCK, BRZ, 0.319 ID, 0.591 OD COML AP		1	
	68	310-0062-000	3	WASHER, FLAT, NI PL BRS, 0.343 ID, 0.750 OD COML AP		1	
	69	544-0087-002	3	BOARD ASSY, CAPACITOR		1	

	FIG. - ITEM	PART NO.	INDENT.	NOMENCLATURE		UNITS PER ASSY.	USAGE CODE
5-2	70	MS51957-12	3	SCREW, MACH., SST, PAN HD, 4-40 X 3/16 343-0132-000 AP		2	
	71	310-0278-000	3	WASHER, LOCK, SST, 0.115 ID, 0.202 OD COML AP		2	
	72	SPL4040-4HOT TINNED	3	TERMINAL 77147 304-0332-000 AP		1	
	73	HTS17-3000Z	4	CAPACITOR, FXD, 3000 PF P100M20%, 350 VDCW 00656 913-3339-000	1C11-1C16	6	
	74	544-0085-002	4	BOARD, CONDENSER		1	
	75	544-0083-002	5	BRACKET, RIGHT		1	
	76	305-0064-000	5	RIVET, TUBULAR, CAD. PL BRS, 0.059 DIA X 3/16 LG SHK COML AP		2	
	77	544-0084-002	5	BRACKET, LEFT		1	
	78	305-0064-000	5	RIVET, TUBULAR, CAD. PL BRS, 0.059 DIA X 3/16 LG SHK COML AP		2	
	79	544-0082-002	5	COVER, BOARD		1	
	80	ES2816-2	5	TERMINAL 71279 306-0251-000		12	
	81	544-0081-002	5	BOARD, CONDENSER	1TB3	1	
	82	544-0061-002	3	FILTER ASSY, DISCR		1	
	83	AN5004-7	3	SCREW, MACH., CAD. PL STL, 4-40 X 7/16 347-0297-000 AP		6	
	84	310-0074-000	3	WASHER, LOCK, BRZ, 0.088 ID, 0.175 OD COML AP		6	
	85	543-9973-002	4	PLATE, CAPACITOR		1	
	86	P343-0297-00 0	4	SCREW, MACH., NI PL BRS, PAN HD, 2-56 X 1/8 77250 343-0297-000 AP		3	
	87	310-0074-000	4	WASHER, LOCK, BRZ, 0.088 ID, 0.175 OD COML AP		3	
	87A	2465-009W5TO 102P	5	CAPACITOR, FXD, 1000 PF, 500 VDCW 72982 913-3209-000	1C6-1C10	5	
	87B	544-0052-002	5	WASHER, LOCK		1	
	88	18-124	4	COIL, RF, 1 MH 09250 240-0313-000	1L2-1L6	5	
	89	544-0053-002	4	BOARD, FIL		1	
	90	544-0057-002	5	ANGLE, FIL BOARD		1	
	91	R3484X3-16NI	5	RIVET, TUBULAR, NI PL BRS, 0.089 DIA X 3/16 LG SHK 12014 305-0121-000 AP		3	
	92	X1463C	5	TERMINAL 71279 306-0194-000		10	
	93	544-0051-002	5	BOARD, FIL	1TB3	1	
	94	178-2015	3	CONNECTOR 02660 357-9279-000	1TB1	1	
	94A	553-7180-003	3	COVER, COUPLER		1	
	94B	MS122118	4	INSERT 012-1609-000		4	
	95	544-0137-005	4	COVER, FRONT		1	
	96	546-3305-004	2	ADAPTER, FAN		1	
	96A	546-3458-002	2	BRACKET, ALIGN.		1	
R	96B	P313-0051-00 0	2	NUT, PLAIN, HEX., NI PL BRS, 4-40 77250 313-0051-000 AP		1	
R	96C	310-0396-000	2	WASHER, LOCK, BRZ, 0.115 ID, 0.202 OD COML AP		1	
R	96D	310-0054-000	2	WASHER, FLAT, NI PL BRS, 0.125 ID, 0.312 OD COML AP		1	
R	96E	P343-0286-00 0	2	SCREW, MACH., NI PL BRS, PAN HD, 4-40 X 5/16 77250 343-0286-000 AP		1	
	97	543-9997-002	2	BAND, ADAPTER		1	
R	98	MS51957-29	2	SCREW, MACH., SST, PAN HD, 6-32 X 7/16 343-0170-000 AP		1	

	FIG. - ITEM	PART NO.	INDENT.	NOMENCLATURE		UNITS PER ASSY.	USAGE CODE
R	5-2 98A	310-0046-000	2	WASHER, FLAT, SST, 0.147 ID, 0.312 OD COML AP		1	
	99	544-0127-004	2	PLATE ASSY, END		1	
	100	MS51959-46	2	SCREW, MACH., SST, FH, 8-32 X 5/8 342-0081-000 AP		5	
	101	P347-0091-000	2	SCREW, MACH., NI PL BRS, FIL H, 4-40 X 5/16 77250 347-0091-000 AP		1	
	102	310-0396-000	2	WASHER, LOCK, BRZ, 0.115 ID, 0.202 OD COML AP		1	
	103	1024-6HOTTINNED	2	TERMINAL 77147 304-0140-000 AP		1	
	104	A0-15497-2	3	FAN 82877 009-1376-000	1B4	1	
	105	MS51957-30	3	SCREW, MACH., SST, PAN HD, 6-32 X 1/2 343-0171-000 AP		3	
	106	543-9857-002	3	CLAMP, CAPACITOR		2	
	107	P343-0016-000	3	SCREW, MACH., SST, PAN HD, 4-40 X 1-1/8 77250 343-0016-000 AP		4	
	108	MS35338-135	3	WASHER, LOCK, SST, 0.115 ID, 0.212 OD 310-0279-000 AP		4	
	109	P96852	3	CAPACITOR, FXD, 0.47 UF 10%, 230 VDCW 56289 931-8421-000 AP	1C2-1C5	4	
	110	543-9983-002	3	BRACKET, CAPACITOR		1	
	111	MS51959-14	3	SCREW, MACH., SST, FH, 4-40 X 5/16 342-0045-000 AP		2	
	112	543-9937-002	3	SUPPORT, ROLLER		6	
	113	MS51959-12	3	SCREW, MACH., SST, FH, 4-40 X 3/16 342-0043-000 AP		6	
	114	543-9896-002	3	ROLLER, COIL		6	
	115	MS16633-1018	3	RING 340-0090-000 AP		6	
	116	2A1DB12	3	TERMINAL 92825 306-0234-000	1E2-1E4	3	
	117	P343-0289-000	3	SCREW, MACH., NI PL BRS, PAN HD, 4-40 X 1/2 77250 343-0289-000 AP		3	
	118	543-9880-002	3	SUPPORT, CENTER TAP		1	
	119	MS51959-12	3	SCREW, MACH., SST, FH, 4-40 X 3/16 342-0043-000 AP		2	
	120	67321-0-122	3	SWITCH 73168 267-0071-000	1S13	1	
	121	P343-0285-000	3	SCREW, MACH., NI PL BRS, PAN HD, 4-40 X 1/4 77250 343-0285-000 AP		3	
	122	67321-0-212	3	SWITCH 73168 267-0070-000	1S12	1	
	123	P343-0289-000	3	SCREW, MACH., NI PL BRS, PAN HD, 4-40 X 1/2 77250 343-0289-000 AP		3	
	124	541-5977-002	3	SPACER, SLV AP		3	
	125	544-0132-004	3	PLATE, END		1	
	126	543-9882-002	2	SPACER, COIL		2	
R	127	328-0005-000	2	SETSCREW, SST, 4-48 X 1/8 COML AP		1	
	128	MS51959-46	2	SCREW, MACH., SST, FH, 8-32 X 5/8 342-0081-000 AP		1	
	129	500-1126-003	2	WASHER, FLAT AP		2	
	130	P343-0285-000	2	SCREW, MACH., NI PL BRS, PAN HD, 4-40 X 1/4 77250 343-0285-000 AP		1	
	131	310-0396-000	2	WASHER, LOCK, BRZ, 0.115 ID, 0.202 OD COML AP		1	
	132	1024-6HOTTINNED	2	TERMINAL 77147 304-0140-000 AP		1	

FIG. - ITEM	PART NO.	INDENT.	NOMENCLATURE	UNITS PER ASSY.	USAGE CODE
5-2 133	543-9972-002	2	SPACER, UPPER	3	
134	MS51959-46	2	SCREW, MACH., SST, FH, 8-32 X 5/8 342-0081-000 AP	1	
135	500-1126-003	2	WASHER, FLAT AP	2	
136	544-0047-002	2	TUBE, INSULATOR	1	
137	544-0090-002	2	CONNECTOR	1	
138	4-48X1-8 6SP LINEOVPT18-8 SST	2	SETSCREW, SST, 4-48 X 1/8 08664 335-0019-000 AP	1	
139	544-0065-002	2	BAYONET, COAX	1	
140	543-5645-003	2	WASHER	1	
141	553-5760-003	2	GEAR, SPUR, 18 TEETH	1	
142	MS16562-193	2	PIN, SPG, SST, 0.062 DIA X 7/16 LG 311-0420-000 AP	1	
143	SFR168PPK28-7	2	BEARING 83086 309-0671-000 AP	1	
144	543-9856-002	2	SHAFT, CENTER TAP	1	
145	544-0063-002	2	NUT, SHAFT	1	
146	543-9930-002	2	HOUSING ASSY, TAP	1	
147	543-9929-002	3	CONTACT, ELECTRICAL	1	
148	P343-0297-00 0	3	SCREW, MACH., NI PL BRS, PAN HD, 2-56 X 1/8 77250 343-0297-000 AP	2	
149	310-0075-000	3	WASHER, LOCK, BRZ, 0.088 ID, 0.165 OD COML AP	2	
150	5100-37C	3	RING 79136 340-0043-000	1	
151	544-0049-002	3	WASHER, SHOULDERED	1	
152	543-5644-003	3	WASHER	1	
153	544-0054-002	3	SPRING, HELICAL	1	
154	544-0028-002	3	HOUSING, TAP	1	
155	544-0050-002	4	BUSHING, SLV	2	
156	544-0029-002	4	HOUSING, TAP	1	
157	543-9969-002	2	SUPPORT, SHAFT	1	
R 158	P343-0288-00 0	2	SCREW, MACH., NI PL BRS, PAN HD, 4-40 X 7/16 77250 343-0288-000 AP	2	
159	544-0117-003	2	DRUM ASSY, L-V	1	
160	MS16562-192	2	PIN, SPG, SST, 0.062 DIA X 3/8 LG 311-0419-000 AP	1	
161	SFR168PPK25-26	2	BEARING 83086 309-0814-000 AP	1	
162	543-9878-002	3	GEAR, DRUM, 80 TEETH	1	
163	MS51959-13	3	SCREW, MACH., SST, FH, 4-40 X 1/4 342-0044-000 AP	2	
164	553-5674-002	3	HUB, GEAR	1	
165	MS16562-193	3	PIN, SPG, SST, 0.062 DIA X 7/16 LG 311-0420-000 AP	1	
166	543-9942-002	3	PLATE, END	1	
167	P343-0298-00 0	3	SCREW, MACH., NI PL BRS, PAN HD, 2-56 X 3/16 77250 343-0298-000 AP	4	
168	1902-00CADPL	3	WASHER, LOCK, CAD. PL BRZ, 0.095 ID, 0.185 OD 78189 373-3120-000 AP	4	
169	P313-0051-00 0	3	NUT, PLAIN, HEX., NI PL BRS, 4-40 77250 313-0051-000 AP	1	
170	310-0045-000	3	WASHER, FLAT, SST, 0.125 ID, 0.312 OD COML AP	1	

FIG. - ITEM	PART NO.	INDENT.	NOMENCLATURE	UNITS PER ASSY.	USAGE CODE
5-2 171	P343-0285-00 0	3	SCREW, MACH., NI PL BRS, PAN HD, 4-40 X 1/4 77250 343-0285-000 AP	1	
172	543-9840-002	4	BEARING	1	
173	543-9858-002	4	PLATE, END	1	
174	543-9908-002	3	SPRING, LOADING	1	
175	P343-0284-00 0	3	SCREW, MACH., NI PL BRS, PAN HD, 4-40 X 3/16 77250 343-0284-000 AP	1	
176	310-0045-000	3	WASHER, FLAT, SST, 0.125 ID, 0.312 OD COML AP	1	
177	543-9884-002	3	SUPPORT, SPG	1	
178	6-32X1-8 4SP LINEOVPT18-8 SST	3	SETSCREW, SST, 6-32 X 1/8 08664 335-0020-000 AP	2	
179	543-9876-002	3	SHAFT, DRUM	1	
180	543-9903-002	3	PLATE, END	1	
181	P343-0298-00 0	3	SCREW, MACH., NI PL BRS, PAN HD, 2-56 X 3/16 77250 343-0298-000 AP	4	
182	1902-00CADPL	3	WASHER, LOCK, CAD. PL BRZ, 0.095 ID, 0.185 OD 78189 373-3120-000 AP	4	
183	506-0962-002	3	LUG, RIBBON AP	1	
184	543-9840-002	4	BEARING	1	
185	543-9893-002	4	CONTACT, GROUND	1	
186	543-9974-002	4	PLATE, END	1	
187	543-9865-002	3	DRUM, LOADING	1	
188	544-2693-003	2	TAP ASSY, CENTER	1	
189	544-0694-002	3	CONTACT, ELECTRICAL	1	
190	544-0695-002	3	CONTACT, ELECTRICAL	1	
191	P343-0297-00 0	3	SCREW, MACH., NI PL BRS, PAN HD, 2-56 X 1/8 77250 343-0297-000 AP FOR 189 AND 190	1	
192	P343-0300-00 0	3	SCREW, MACH., NI PL BRS, PAN HD, 2-56 X 5/16 77250 343-0300-000 AP FOR 189 AND 190	1	
193	310-0075-000	3	WASHER, LOCK, BRZ, 0.088 ID, 0.165 OD COML AP FOR 189 AND 190	2	
194	544-2686-002	3	POST AP FOR 189 AND 190	1	
195	544-2692-003	3	ROLLER AP FOR 189 AND 190	1	
196	544-2678-002	3	SHAFT AP FOR 189 AND 190	1	
197	544-2682-002	3	PIN, STOP AP FOR 189 AND 190	1	
198	544-2692-003	3	ROLLER	3	
199	P343-0300-00 0	3	SCREW, MACH., NI PL BRS, PAN HD, 2-56 X 5/16 77250 343-0300-000 AP	3	
200	310-0075-000	3	WASHER, LOCK, BRZ, 0.088 ID, 0.165 OD COML AP	3	
201	310-0053-000	3	WASHER, FLAT, NI PL BRS, 0.093 ID, 0.250 OD COML AP	3	
202	544-2685-002	3	POST AP	1	
203	544-2684-002	3	POST AP	1	
204	544-2683-002	3	POST AP	1	
205		1	DELETED		
206	544-2679-002	3	SHAFT AP	1	
207	544-2680-002	3	SHAFT AP	1	
208	544-2681-002	3	SHAFT AP	1	
209	544-2682-002	3	PIN, STOP AP	1	

FIG. - ITEM	PART NO.	INDENT.	NOMENCLATURE	UNITS PER ASSY.	USAGE CODE
5-2 210	P343-0284-00 0	3	SCREW, MACH., NI PL BRS, PAN HD, 4-40 X 3/16 77250 343-0284-000 AP	2	
211	544-2687-002	3	GEAR, 136 TEETH	1	
212	544-0667-002	3	RING, ELECTRICAL CONT	1	
213		1	DELETED		
214		1	DELETED		
215		1	DELETED		
216		1	DELETED		
217		1	DELETED		
218	544-0116-003	2	DRUM ASSY, H-V	1	
219	544-2670-002	3	SHAFT, OUTPUT	1	
220	MS16562-191	3	PIN, SPG, SST, 0.062 DIA X 5/16 LG 311-0418-000 AP	1	
221	506-0993-002	4	POINT, CONT	1	
222	544-2669-002	4	SHAFT, OUTPUT	1	
223	544-2689-002	3	FLANGE, BOLTING	1	
224	P342-0156-00 0	3	SCREW, MACH., NI PL BRS, FH, 4-40 X 1/2 77250 342-0156-000 AP	4	
225	544-0623-002	3	GEAR, SPUR, 80 TEETH	1	
226	P313-0051-00 0	3	NUT, PLAIN, HEX., NI PL BRS, 4-40 77250 313-0051-000 AP	6	
227	P342-0157-00 0	3	SCREW, MACH., NI PL BRS, FH, 4-40 X 5/8 77250 342-0157-000 AP	6	
228	544-2688-002	3	STOP, TAP	1	
229	310-0054-000	3	WASHER, FLAT, NI PL BRS, 0.125 ID, 0.312 OD COML AP	6	
230	302-0024-000	3	WASHER, NM, CORPRENE, 0.125 ID, 0.312 OD COML AP	6	
231	544-0684-002	4	RING, SUPPORT	1	
232	310-0128-000	4	WASHER, FLAT, SIL PL BRS, 0.067 ID, 0.125 OD COML AP	4	
233	305-0069-000	4	RIVET, TUBULAR, CAD. PL BRS, 0.059 DIA X 9/32 LG SHK COML AP	4	
234	544-0685-002	4	SPACER, SLV AP	4	
235	544-0683-002	4	RACE, COIL SUPPORT	1	
236	544-0727-003	4	SUPPORT, COIL	1	
237	544-0655-002	3	SPRING, HELICAL	4	
238	1024-6HOTTIN NED	3	TERMINAL 77147 304-0140-000	1	
239	P343-0328-00 0	3	SCREW, MACH., NI PL BRS, PAN HD, 6-32 X 1/4 77250 343-0328-000 AP	1	
240	310-0078-000	3	WASHER, LOCK, BRZ, 0.141 ID, 0.239 OD COML AP	1	
241	998-0026-000	3	RIBBON 94084	1L1	1
242	544-0112-003	3	FORM, COIL		1
243	544-2667-002	2	COLLAR		1
244	4-48X1-8 6SP LINEOVPT18-8 SST	2	SETSCREW, SST, 4-48 X 1/8 08664 335-0019-000 AP		3
245	SFR168PPK25-26	2	BEARING 83086 309-0814-000		2
246	544-2668-002	2	RING, CORONA		1
247		1	DELETED		
248		1	DELETED		
249	HP4N	2	CLAMP 09922 150-1541-000		1
250	P343-0285-00 0	2	SCREW, MACH., NI PL BRS, PAN HD, 4-40 X 1/4 77250 343-0285-000 AP		1

FIG. - ITEM	PART NO.	INDENT.	NOMENCLATURE		UNITS PER ASSY.	USAGE CODE
5-2 251	310-0054-000	2	WASHER, FLAT, NI PL BRS, 0.125 ID, 0.312 OD COML AP		1	
252	NE2	2	LAMP 08805 262-0025-000	1RT1	1	
253	926H4	2	RETAINER 07387 139-0647-000		1	
254	P343-0285-00 0	2	SCREW, MACH., NI PL BRS, PAN HD, 4-40 X 1/4 77250 343-0285-000 AP		1	
255	RC32GF104K	2	RESISTOR, FXD, 0.10 MEG 10%, 1 W 745-3436-000	1R1	1	
256	548-4020-005	2	PLATE ASSY, GEAR		1	
256A	548-4014-003	3	TERMINAL BOARD	1TB1	1	
256B	P343-0287-00 0	3	SCREW, MACH., NI PL BRS, PAN HD, 4-40 X 3/8 77250 343-0287-000 AP		3	
256C	548-4008-002	3	POST, SPACER AP		2	
256D	548-4007-002	3	POST, SPACER AP		1	
256E	310-0054-000	3	WASHER, FLAT, NI PL BRS, 0.125 ID, 0.312 OD COML AP		2	
256F	310-0396-000	3	WASHER, LOCK, BRZ, 0.115 ID, 0.202 OD COML AP		3	
256G	SPL4040-4HOT TINNED	3	TERMINAL 77147 304-0332-000 AP		1	
256H	4422-11-117	4	COIL, RF, 39 UH 82142 240-0171-000	1L13	1	
256J	MS90539-08	4	COIL, RF, 500 UH 240-2533-000	1L7-1L12	6	
256K	HPA42N470-23 1K	4	CAPACITOR, FXD, 230 PF 10%, 5000 VDCW 04222 913-4350-000	1C19	1	
256L	P343-0365-00 0	4	SCREW, MACH., NI PL BRS, PAN HD, 1/4-20 X 7/16 77250 343-0365-000 AP		1	
256M	310-0082-000	4	WASHER, LOCK, BRZ, 0.255 ID, 0.493 OD COML AP		1	
256N	4012HOTTINNE D	4	TERMINAL 77147 304-2800-000 AP		1	
256P	310-0061-000	4	WASHER, FLAT, NI PL BRS, 0.265 ID, 0.625 OD COML AP		2	
256Q	548-4017-004	4	TERMINAL BOARD		1	
256R	548-4015-003	3	BRACKET, COND		1	
256S	P343-0362-00 0	3	SCREW, MACH., NI PL BRS, PAN HD, 1/4-20 X 1/4 77250 343-0362-000 AP		1	
256T	310-0082-000	3	WASHER, LOCK, BRZ, 0.255 ID, 0.493 OD COML AP		1	
256U	544-0043-002	3	NUT, ANTI CORONA AP		1	
256V	310-0076-000	3	WASHER, LOCK, BRZ, 0.115 ID, 0.212 OD COML AP		1	
256W	310-0054-000	3	WASHER, FLAT, NI PL BRS, 0.125 ID, 0.312 OD COML AP		1	
256X	543-5649-003	3	WASHER AP		1	
256Y	845-014X5V05 032	3	CAPACITOR, FXD, 0.05 UF P80M20%, 100 VDCW 72982 913-3679-000	1C17, 1C18	2	
257	190907A	3	SWITCH SECTION 76854 269-1992-000	1S4	1	
258	68-1660-26	3	NUT, SELF-LKG, HEX., AL, 2-56 72962 333-0604-000 AP		2	
259	543-9987-002	3	SPACER, SLV AP		2	
260	543-9986-002	3	SPACER, SLV AP		2	
261	15517-002	3	WASHER, NM, FIBER, 0.088 ID, 0.150 OD 76854 269-8031-000 AP		2	

FIG. - ITEM	PART NO.	INDENT.	NOMENCLATURE	UNITS PER ASSY.	USAGE CODE
5-2 261A	P343-0473-00 0	3	SCREW, MACH., CAD. PL STL, PAN HD, 2-56 X 1-1/8 77250 343-0473-000 AP	2	
262	5133-25C	3	RING 79136 340-0254-000	1	
263	500-1096-003	3	WASHER	AR	
263A	500-1084-003	3	WASHER	AR	
263B	504-0725-002	3	WASHER	AR	
264	548-4027-003	3	PLATE, SWITCH ASSY	1	
265	544-0043-002	3	NUT, ANTI CORONA AP	1	
266	P312-0064-00 0	3	STUD, CONTINUOUS THD, CAD. PL BRS, 4-40 X 1/2 77250 312-0064-000 AP	2	
267	P312-0008-00 0	3	STUD, CONTINUOUS THD, SST, 4-40 X 7/16 77250 312-0008-000 AP	3	
268	P312-0011-00 0	3	STUD, CONTINUOUS THD, SST, 4-40 X 5/8 77250 312-0011-000 AP	3	
269	540-9051-003	3	POST, ELECTRICAL-MECHANICAL EQUIP. AP	1	
270	544-0056-002	3	SPACER, H-V SWITCH AP	3	
271	543-9848-002	3	POST, SPACING AP	4	
272	310-0396-000	3	WASHER, LOCK, BRZ, 0.115 ID, 0.202 OD COML AP	1	
273	SPL4040-4HOT TINNED	3	TERMINAL 77147 304-0332-000 AP	1	
274	545-7546-003	3	WASHER AP	4	
275	543-5649-003	3	WASHER AP	4	
276	543-9956-002	4	STRIP, CONT	1	
277	544-0043-002	4	NUT, ANTI CORONA AP	1	
278	310-0076-000	4	WASHER, LOCK, BRZ, 0.115 ID, 0.212 OD COML AP	1	
279		1	DELETED		
280		1	DELETED		
281	310-0054-000	4	WASHER, FLAT, NI PL BRS, 0.125 ID, 0.312 OD COML AP	1	
282	543-5649-003	4	WASHER AP	1	
283	543-9848-002	4	POST, SPACING AP	1	
284	P312-0063-00 0	4	STUD, CONTINUOUS THD, CAD. PL BRS, 4-40 X 7/16 77250 312-0063-000 AP	1	
285	543-9866-002	4	STRIP, GROUND	1	
286	P343-0301-00 0	4	SCREW, MACH., NI PL BRS, PAN HD, 2-56 X 3/8 77250 343-0301-000 AP	2	
287	310-0074-000	4	WASHER, LOCK, BRZ, 0.088 ID, 0.175 OD COML AP	2	
288	SPL4040-2HOT TINNED	4	TERMINAL 77147 304-0331-000 AP	1	
289	310-0053-000	4	WASHER, FLAT, NI PL BRS, 0.093 ID, 0.250 OD COML AP	2	
290	543-5649-003	4	WASHER AP	2	
291	543-9848-002	4	POST, SPACING AP	2	
292	543-9959-002	4	CONTACT, H-V	2	
293	P343-0298-00 0	4	SCREW, MACH., NI PL BRS, PAN HD, 2-56 X 3/16 77250 343-0298-000 AP	2	
294	310-0074-000	4	WASHER, LOCK, BRZ, 0.088 ID, 0.175 OD COML AP	2	
295	SPL4040-2HOT TINNED	4	TERMINAL 77147 304-0331-000 AP	2	
296		1	DELETED		

	FIG. - ITEM	PART NO.	INDENT.	NOMENCLATURE		UNITS PER ASSY.	USAGE CODE
5-2	297	310-0053-000	4	WASHER, FLAT, NI PL BRS, 0.093 ID, 0.250 OD COML AP		2	
	298	543-5649-003	4	WASHER AP		2	
	299	543-9860-002	4	PLATE, SWITCH		1	
	300	543-9840-002	5	BEARING		1	
	301	544-0113-003	5	PLATE, SWITCH		1	
	302	543-9965-002	3	ROTOR ASSY, H-V	1S3	1	
	303		1	DELETED			
	304		1	DELETED			
	305		1	DELETED			
	306		1	DELETED			
	307		1	DELETED			
	308		1	DELETED			
	309		1	DELETED			
	310		1	DELETED			
	311	190909A	3	SWITCH SECTION 76854 269-1995-000	1S10	1	
	312	190910A	3	SWITCH SECTION 76854 269-1994-000	1S7	1	
	313	P343-0005-000	3	SCREW, MACH., SST, PAN HD, 2-56 X 5/8 77250 343-0005-000 AP		2	
	314	543-9987-002	3	SPACER, SLV AP		4	
	315	553-9830-002	3	SPACER, SLV AP		2	
	316	543-9823-002	3	CAM, STOP		1	
	317	4-48X1-8 6SP LINEOVPT18-8 SST	3	SETSCREW, SST, 4-48 X 1/8 08664 335-0019-000 AP		2	
	318	543-9861-002	3	BRACKET, SWITCH		2	
	319		1	DELETED			
	320	P347-0050-000	3	SCREW, MACH., SST, FIL H, 8-32 X 5/16 77250 347-0050-000 AP		1	
	321	MS35338-137	3	WASHER, LOCK, SST, 0.168 ID, 0.280 OD 310-0283-000 AP		1	
	322	544-0091-002	3	POST AP		1	
	323	543-9948-002	3	ACTUATOR, STOP		1	
	324	4-48X1-8 6SP LINEOVPT18-8 SST	3	SETSCREW, SST, 4-48 X 1/8 08664 335-0019-000 AP		2	
	325	543-9957-002	3	SPRING, STOP		1	
	326	544-0079-002	3	ANGLE, CONT GAP		1	
	327	P343-0286-000	3	SCREW, MACH., NI PL BRS, PAN HD, 4-40 X 5/16 77250 343-0286-000 AP		1	
	328	310-0396-000	3	WASHER, LOCK, BRZ, 0.115 ID, 0.202 OD COML AP		1	
	329	545-7546-003	3	WASHER AP		1	
	330	544-0097-002	3	BOARD, CONT		1	
	331	P342-0157-000	3	SCREW, MACH., NI PL BRS, FH, 4-40 X 5/8 77250 342-0157-000 AP		3	
	332	544-0102-002	3	PIN, OUTPUT	1P1	1	
	333	MS16624-1037	3	RING 340-0013-000 AP		1	
R	334	553-5005-003	3	WASHER AP		2	
R	334A	502-5197-002	3	WASHER, TENS AP		1	
	335	544-0103-002	3	LEAD, ELECTRICAL		1	
	336	544-0090-002	3	CONNECTOR		4	
	337	4-48X1-8 6SP LINEOVPT18-8 SST	3	SETSCREW, SST, 4-48 X 1/8 08664 335-0019-000 AP		4	
	338	544-0096-002	3	POST		3	

	FIG. - ITEM	PART NO.	INDENT.	NOMENCLATURE		UNITS PER ASSY.	USAGE CODE
5-2	339	P343-0290-00 0	3	SCREW, MACH., NI PL BRS, PAN HD, 4-40 X 5/8 77250 343-0290-000 AP		3	
	340	RB3-26D737	3	RELAY 73905 410-0168-000	1K1	1	
R	340A	491-32-11-08 0-933	3	TERMINAL 71785 304-0011-000 AP		2	
	341	543-5658-003	3	WASHER AP		1	
	342	548-1337-002	3	SWITCH ASSY		1	
	343		1	DELETED			
	344		1	DELETED			
	345		1	DELETED			
	346		1	DELETED			
	347	P343-0285-00 0	3	SCREW, MACH., NI PL BRS, PAN HD, 4-40 X 1/4 77250 343-0285-000 AP FOR 342		2	
	348	4D4A12	3	TERMINAL 92825 306-0348-000	1E5,1E6	2	
	349	P343-0300-00 0	3	SCREW, MACH., NI PL BRS, PAN HD, 2-56 X 5/16 77250 343-0300-000 AP		2	
	350	540-9168-003	3	POST, ELECTRICAL-MECHANICAL EQUIP.		1	
	351	P343-0286-00 0	3	SCREW, MACH., NI PL BRS, PAN HD, 4-40 X 5/16 77250 343-0286-000 AP		1	
	352	547-3773-003	3	STOP, DRUM		1	
	353		1	DELETED			
	354		1	DELETED			
	355		1	DELETED			
	356	190908A	3	SWITCH SECTION 76854 269-1993-000	1S5	1	
	357	P347-0050-00 0	3	SCREW, MACH., SST, FIL H, 8-32 X 5/16 77250 347-0050-000 AP		2	
	358	543-9987-002	3	SPACER, SLV AP		2	
	359	543-9985-002	3	SPACER, SLV AP		2	
	360	5133-25C	3	RING 79136 340-0254-000		1	
	361	543-5650-003	3	WASHER		AR	
	362	543-9887-002	3	HUB, SUPPORT		1	
	363	P343-0285-00 0	3	SCREW, MACH., NI PL BRS, PAN HD, 4-40 X 1/4 77250 343-0285-000 AP		2	
	364	544-0795-002	4	BEARING		2	
	365	543-9907-002	4	HUB, SUPPORT		1	
	366	544-0011-002	3	GEAR, DRUM, 40 TEETH		1	
	367	P343-0285-00 0	3	SCREW, MACH., NI PL BRS, PAN HD, 4-40 X 1/4 77250 343-0285-000 AP		1	
	368	545-7546-003	3	WASHER AP		1	
	369	5100-25C	3	RING 79136 340-0038-000		1	
	370	SFR168PPK28-7	3	BEARING 83086 309-0671-000		1	
	371	544-0009-002	3	GEAR, 52 TEETH		1	
	372	P343-0285-00 0	3	SCREW, MACH., NI PL BRS, PAN HD, 4-40 X 1/4 77250 343-0285-000 AP		1	
	373	545-7546-003	3	WASHER AP		1	
	374	544-0010-002	3	GEAR, 20 TEETH		1	
	375	P343-0285-00 0	3	SCREW, MACH., NI PL BRS, PAN HD, 4-40 X 1/4 77250 343-0285-000 AP		1	
	376	310-0054-000	3	WASHER, FLAT, NI PL BRS, 0.125 ID, 0.312 OD COML AP		1	

FIG. - ITEM	PART NO.	INDENT.	NOMENCLATURE		UNITS PER ASSY.	USAGE CODE
5-2 377	190909A	3	SWITCH SECTION 76854 269-1995-000	1S14	1	
378	MS51957-7	3	SCREW, MACH., SST, PAN HD, 2-56 X 1/2 343-0128-000 AP		2	
379	543-9987-002	3	SPACER, SLV AP		2	
380	553-9829-002	3	SPACER AP		2	
381	543-9957-002	3	SPRING, STOP		1	
382	543-9905-002	3	SCREW, ANCHOR		1	
383	544-0044-002	3	ARM, STOP		1	
384	MS16624-12	3	RING 340-0021-000 AP		1	
385	544-0022-002	3	PIN, STOP		1	
386	P343-0285-000	3	SCREW, MACH., NI PL BRS, PAN HD, 4-40 X 1/4 77250 343-0285-000 AP		4	
387	544-0128-002	3	PLATE, GEAR		1	
388	MS51959-28	3	SCREW, MACH., SST, FH, 6-32 X 3/8 342-0062-000 AP		4	
389	P343-0309-000	3	SCREW, MACH., NI PL BRS, PAN HD, 8-32 X 3/8 77250 343-0309-000 AP		1	
390	P342-0183-000	3	SCREW, MACH., NI PL BRS, FH, 8-32 X 5/16 77250 342-0183-000 AP		1	
391	543-9839-002	4	BEARING		2	
392	543-9840-002	4	BEARING		4	
393	544-0066-002	4	BEARING, SPL		1	
394	544-0130-004	4	PLATE, GEAR		1	
395	543-9833-002	3	GEAR SHAFT, SPUR, 24 TO 30 TEETH		1	
R 395A	S125-250FHHP 15LY5	3	BEARING 40920 309-1977-050 AP		1	
396	543-9949-002	3	GEAR, SOLDERED, 18 TO 60 TEETH		1	
397	543-9951-002	3	GEAR ASSY, 40 TEETH		1	
398	544-0012-002	4	GEAR, 40 TEETH		1	
399	MS51959-2	4	SCREW, MACH., SST, FH, 2-56 X 3/16 342-0132-000 AP		2	
400	543-9845-002	4	HUB, GEAR		1	
401	543-9871-002	4	SHAFT		1	
402	543-9950-002	3	GEAR ASSY, 20 TO 70 TEETH		1	
403	543-9849-002	4	GEAR, 70 TEETH		1	
404	P342-0142-000	4	SCREW, MACH., NI PL BRS, FH, 2-56 X 3/16 77250 342-0142-000 AP		3	
405	543-9847-002	4	GEAR, SPUR, 20 TEETH		1	
406	543-9870-002	4	SHAFT		1	
407	543-9953-002	3	GEAR, PINNED, 35 TEETH		1	
408	543-9851-002	4	GEAR, 35 TEETH		1	
409	MS16562-192	4	PIN, SPG, SST, 0.062 DIA X 3/8 LG 311-0419-000 AP		1	
410	543-9993-002	4	SHAFT, DRIVE		1	
411	543-9834-002	3	GEAR, CAP, 24 TEETH		1	
412	543-9952-002	3	GEAR, SOLDERED, 24 TO 81 TEETH		1	
413	543-9888-002	3	GEAR, BRAZED, 112 TEETH		1	
414	544-0080-002	3	SPRING, SWITCH		1	
415	548-8041-002	3	SHAFT, SWITCH		1	
416	543-9891-002	3	GEAR, SOLDERED, 19 TO 100 TEETH		1	
417	SFR144PPK28-7	3	BEARING 83086 309-0669-000 AP		2	
418	543-9943-002	3	GEAR, DRUM, 99 TEETH		1	
419	SFR168PPK28-7	3	BEARING 83086 309-0671-000 AP		1	
420	543-9869-002	3	GEAR, DRUM, 30 TEETH		1	

	FIG. - ITEM	PART NO.	INDENT.	NOMENCLATURE		UNITS PER ASSY.	USAGE CODE
5-2	421	SFR168PPK28-7	3	BEARING 83086 309-0671-000 AP		2	
	422	543-9921-002	3	GEAR ASSY, 48 TEETH		1	
	423	543-9938-002	3	GEAR, PRESSED, 20 TO 42 TEETH		1	
	424	543-9940-002	3	GEAR, PRESSED, 20 TO 54 TEETH		1	
	425	543-9939-002	3	GEAR, PRESSED, 20 TO 49 TEETH		1	
R	425A	SFR144PPK25-26	3	BEARING 83086 309-0784-000 AP FOR 422 THRU 425		8	
R	425B	506-5938-003	3	WASHER, FLAT AP FOR 422 THRU 425		4	
	426	543-9892-002	3	GEAR, PRESSED, 64 TEETH		1	
	427	4-48X1-8 6SP LINEOVPT18-8 SST	3	SETSCREW, SST, 4-48 X 1/8 08664 335-0019-000 AP		2	
	428	543-9837-002	3	SHAFT, SWITCHING		1	
	429	543-9905-002	3	SCREW, ANCHOR		1	
	430	544-0046-002	3	STOP ASSY, CENTER TAPPED		1	
	431	SFR168PPK28-7	3	BEARING 83086 309-0671-000 AP		2	
	432	544-0003-002	4	STOP		1	
	433	MS51959-14	4	SCREW, MACH., SST, FH, 4-40 X 5/16 342-0045-000 AP		1	
	434	544-0035-002	4	GEAR, SOLDERED, 135 TEETH		1	
	435	544-0032-002	3	GEAR, SOLDERED, 30 TO 68 TEETH		1	
	436	SFR168PPK28-7	3	BEARING 83086 309-0671-000 AP		2	
	437	543-9980-002	3	GEAR, PRESSED, 18 TO 56 TEETH		1	
	438	SFR144PPK28-7	3	BEARING 83086 309-0669-000 AP		2	
	439	543-9932-002	3	GEAR, PRESSED, 18 TO 96 TEETH		1	
R	439A	SFR144PPK25-26	3	BEARING 83086 309-0784-000 AP		2	
	440	543-9931-002	3	GEAR, PRESSED, 18 TO 84 TEETH		1	
	441	SFR144PPK28-7	3	BEARING 83086 309-0669-000 AP		2	
	442	543-9933-002	3	GEAR, PRESSED, 124 TEETH		1	
	443	4-48X1-8 6SP LINEOVPT18-8 SST	3	SETSCREW, SST, 4-48 X 1/8 08664 335-0019-000 AP		2	
	444	543-9916-002	4	HUB, GEAR		1	
	445	543-9970-002	4	GEAR, ASSY, 124 TEETH		1	
	446	544-0036-002	5	CAM, ACTUATING		1	
	447	MS51959-2	5	SCREW, MACH., SST, FH, 2-56 X 3/16 342-0132-000 AP		2	
	448	543-9918-002	5	GEAR, 124 TEETH		1	
	449	543-9906-002	3	SHAFT, SWITCH DRIVE		1	
	450	RS806-1B	3	MOTOR 88818 229-0128-000	1MG2,1MG3	2	
	451	MS51959-13	3	SCREW, MACH., SST, FH, 4-40 X 1/4 342-0044-000 AP		8	
	452	665-53-129	3	MOTOR 72568 229-0186-000	1B1	1	
	453	MS51959-14	3	SCREW, MACH., SST, FH, 4-40 X 5/16 342-0045-000 AP		4	
	454	543-9941-002	3	GEAR, PRESSED, 42 TEETH		1	
	455	SFR168PPK28-7	3	BEARING 83086 309-0671-000 AP		2	
	456	544-0008-002	4	GEAR, 42 TEETH		1	
	457	543-9994-002	4	SHIELD, HUB		1	
	458	P347-0103-000	4	SCREW, MACH., NI PL BRS, FIL H, 2-56 X 3/16 77250 347-0103-000 AP		4	
	459	543-9855-002	4	SHAFT, CAP DRIVE		1	

FIG. - ITEM	PART NO.	INDENT.	NOMENCLATURE	UNITS PER ASSY.	USAGE CODE
5-2 460	1024-6HOTTIN NED	3	TERMINAL 77147 304-0140-000	1	
461	P343-0327-00 0	3	SCREW, MACH., NI PL BRS, PAN HD, 6-32 X 3/16 77250 343-0327-000 AP	1	
462	310-0078-000	3	WASHER, LOCK, BRZ, 0.141 ID, 0.239 OD COML AP	1	
463	USLS-465	3	CAPACITOR, VAR, 5 TO 465 PF 73905 1C1 919-0160-000	1	
464	P347-0171-00 0	3	SCREW, MACH., NI PL BRS, FIL H, 6-32 X 3/8 77250 347-0171-000 AP	3	
465	310-0078-000	3	WASHER, LOCK, BRZ, 0.141 ID, 0.239 OD COML AP	3	
466	1024-6HOTTIN NED	3	TERMINAL 77147 304-0140-000 AP	1	
467	544-0077-002	3	BRACKET, CONT GAP AP	1	
468		1	DELETED		
469	544-2676-002	3	POST, H-V	1	
470	P312-0031-00 0	3	STUD, CONTINUOUS THD, SIL PL BRS, 6-32 X 5/16 77250 312-0031-000 AP	4	
471	756-4721-003	3	INSULATOR, STANDOFF AP	4	
472	P347-0168-00 0	3	SCREW, MACH., NI PL BRS, FIL H, 6-32 X 3/16 77250 347-0168-000 AP	4	
473		1	DELETED		
474		1	DELETED		
475		1	DELETED		
476		1	DELETED		
477		1	DELETED		
478		1	DELETED		
479		1	DELETED		
480	543-9881-002	3	BLOCK, MTG	1	
481	MS51957-28	3	SCREW, MACH., SST, PAN HD, 6-32 X 3/8 343-0169-000 AP	2	
482	543-9886-002	3	BLOCK, MTG	1	
483	MS51957-28	3	SCREW, MACH., SST, PAN HD, 6-32 X 3/8 343-0169-000 AP	2	
484	544-0091-002	3	POST	4	
485	P343-0309-00 0	3	SCREW, MACH., NI PL BRS, PAN HD, 8-32 X 3/8 77250 343-0309-000 AP	2	
486	P347-0159-00 0	3	SCREW, MACH., NI PL BRS, FIL H, 8-32 X 1/4 77250 347-0159-000 AP	2	
487	543-9955-002	3	SCREW, STOP	2	
488	P342-0186-00 0	3	SCREW, MACH., NI PL BRS, FH, 8-32 X 1/2 77250 342-0186-000	1	
489	544-0129-002	3	PLATE, GEAR	1	
490	543-9830-002	4	BEARING, SPL	1	
491	543-9839-002	4	BEARING	2	
492	543-9840-002	4	BEARING	3	
493	544-0131-004	4	PLATE, GEAR	1	

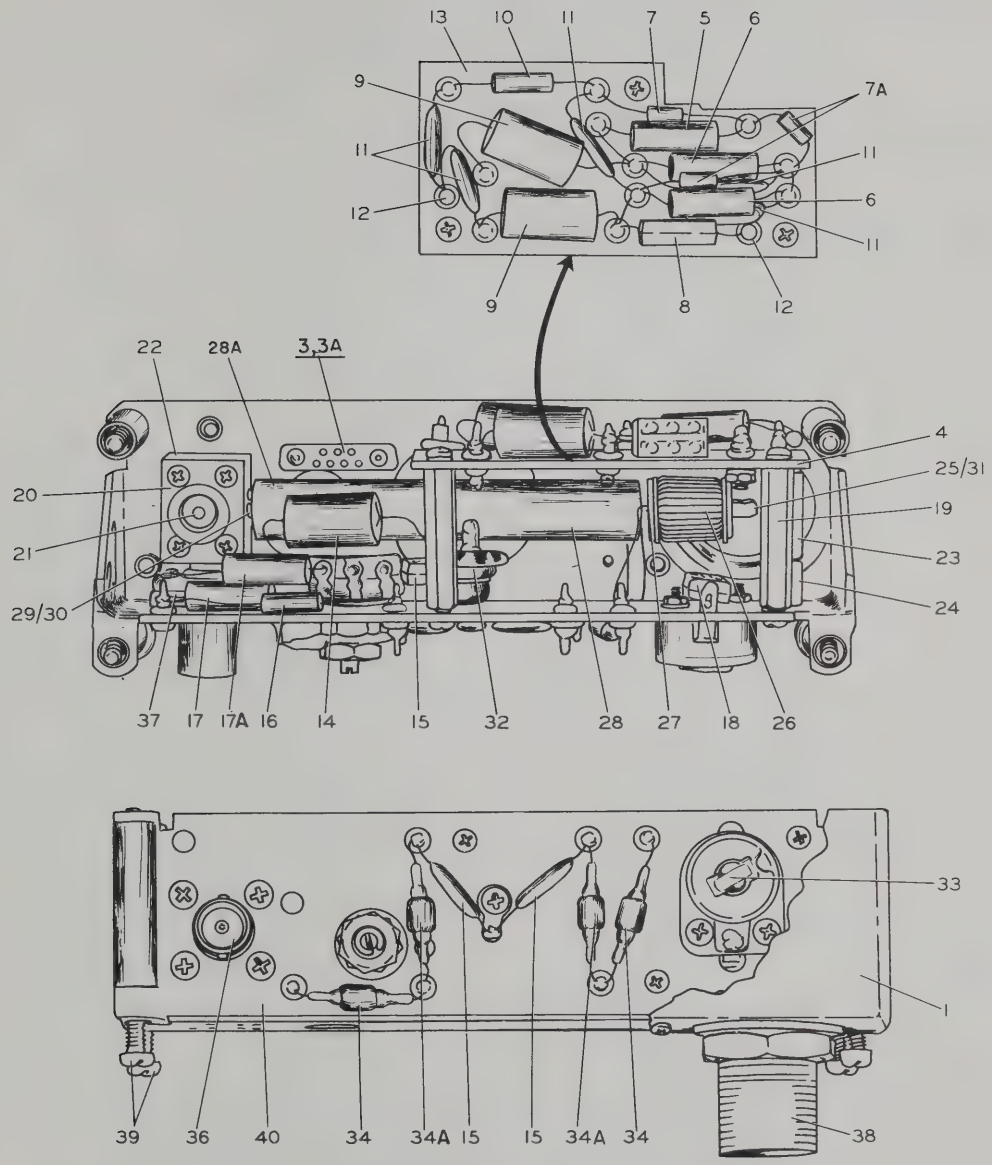


Figure 5-3. Loading Discriminator.

	FIG. - ITEM	PART NO.	INDENT.	NOMENCLATURE	UNITS PER ASSY.	USAGE CODE
	5-3	544-0138-005	1	LOADING DISCRIMINATOR SEE FIG. 5-2-35 OR 5-11-3 FOR NHA	1A1	REF
	1	544-0143-003	2	COVER, DUST		1
		P343-0285-00 0	2	SCREW, MACH., NI PL BRS, PAN HD, 4-40 X 1/4 77250 343-0285-000 AP		4
	2		1	DELETED		
	3	MM7-22P	2	CONNECTOR 16688 372-1697-000	1A1P2	1
	3A	544-9265-002	2	MOUNT, STANDOFF		1
		P342-0143-00 0	2	SCREW, MACH., NI PL BRS, FH, 2-56 X 1/4 77250 342-0143-000 AP FOR 3 AND 3A		2
	4	543-5690-002	2	PLATE ASSY, TERMINAL	1A1TB1	1
		P343-0300-00 0	2	SCREW, MACH., NI PL BRS, PAN HD, 2-56 X 5/16 77250 343-0300-000 AP		3
		310-0074-000	2	WASHER, LOCK, BRZ, 0.088 ID, 0.175 OD COML AP		3
R	5	RC32GF330K	3	RESISTOR, FXD, 33 OHMS 10%, 1 W 745-3289-000 EFF THRU MCN 2594	1A1R1	1
R	5	RC32GF270K	3	RESISTOR, FXD, 27 OHMS 10%, 1 W 745-3286-000 EFF MCN 2595 SB1	1A1R1	1
	6	RN65D1212F	3	RESISTOR, FXD, 12,100 OHMS 1%, 1/2 W 705-7148-000	1A1R2 1A1R3	2
R	7	544-2549-000	3	BAND, IDENT CABLE EFF THRU MCN 2594	1A1CR1	1
R	7	1N914	3	SEMICOND DEVICE 353-2906-000 EFF MCN 2595 SB1	1A1CR1	1
R	7A	544-2549-000	3	BAND, IDENT CABLE EFF THRU MCN 2594	1A1CR2 1A1CR3	1
R	7A	544-2567-002	3	SEMICONDUCTOR DEVICE SET EFF MCN 2595 SB1	1A1CR2 1A1CR3	1
	8	22H5T51EG	3	CAPACITOR, FXD, 510 PF 2%, 500 VDCW 14655 912-1883-000	1A1C7	1
	9	DM0073	3	COIL, RF, 500 MH 99800 240-0073-000	1A1L1 1A1L3	2
	10	RC20GF391K	3	RESISTOR, FXD, 390 OHMS 10%, 1/2 W 745-1335-000	1A1R4	1
	11	CK14AX103M	3	CAPACITOR, FXD, 10,000 PF 20%, 100 VDCW 913-3021-000	1A1C1- 1A1C4 1A1C8	5
	12	502-1375-003	3	TERMINAL, GROUND		2
		SPL4040-4HOT TINNED	3	TERMINAL 77147 304-0332-000 AP		1
		P313-0156-00 0	3	NUT, PLAIN, HEX., NI PL BRS, 4-40 77250 313-0156-000 AP		2
		310-0076-000	3	WASHER, LOCK, BRZ, 0.115 ID, 0.212 OD COML AP		2
	13	543-5685-002	3	TERMINAL BOARD		1
	14	DM0073	2	COIL, RF, 500 MH 99800 240-0073-000	1A1L2	1
	15	CK14AX103M	2	CAPACITOR, FXD, 10,000 PF 20%, 100 VDCW 913-3021-000	1A1C10- 1A1C12	3
	16	RC20GF102K	2	RESISTOR, FXD, 1000 OHMS 10%, 1/2 W 745-1352-000	1A1R5	1
R	17	RN65D1102F	2	RESISTOR, FXD, 11,000 OHMS 1%, 1/2 W 705-7146-000	1A1R6	1
R	17A	RN65D1102F	2	RESISTOR, FXD, 11,000 OHMS 1%, 1/2 W 705-7146-000 EFF THRU MCN 2594	1A1R7	1

	FIG. - ITEM	PART NO.	INDENT.	NOMENCLATURE		UNITS PER ASSY.	USAGE CODE
R	5-3 17A	RN65D7681F	2	RESISTOR, FXD, 7680 OHMS 1%, 1/2 W 705-7317-000 EFF MCN 2595 SB1	1A1R7	1	
	18	854-20N	2	CAPACITOR, FXD, 20 PF 10%, 5000 VDCW 71590 913-1403-000	1A1C5	1	
	19	540-9022-003	2	POST, ELECTRICAL-MECHANICAL EQUIP.		3	
		P343-0300-00 0	2	SCREW, MACH., NI PL BRS, PAN HD, 2-56 X 5/16 77250 343-0300-000 AP		3	
		310-0074-000	2	WASHER, LOCK, BRZ, 0.088 ID, 0.175 OD COML AP		3	
	20	543-5670-002	2	SHELL, ELECTRICAL CONN		1	
		330-2081-000	2	SCREW, MACH., NYLON, SLOT. FH, 2-56 X 5/16 COML AP		4	
	21	543-5672-002	2	CONTACT, ELECTRICAL	1A1P1	1	
	22	543-5671-002	2	SHELL, ELECTRICAL CONN		1	
		330-2082-000	2	SCREW, MACH., NYLON, SLOT. FH, 2-56 X 3/8 COML AP		4	
	23	543-5673-002	2	SUPPORT, SHAFT		1	
		P330-2240-00 0	2	SCREW, MACH., NYLON, SLOT. FIL H, 2-56 X 1/2 77250 330-2240-000 AP		2	
	24	543-5691-002	2	SUPPORT, SHAFT		1	
		330-2347-000	2	SCREW, MACH., NYLON, SLOT. BIND. HD, 2-56 X 1/4 COML AP		2	
	25	543-5682-002	2	TRANSFORMER, VAR	1A1T1,	1	
	26	543-5683-002	3	TRANSFORMER, RF	1A1T2	1	
		5105-12	3	RING 79136 340-0169-000 AP		1	
		542-7516-002	3	WASHER AP		2	
		545-7506-003	3	WASHER AP		6	
	27	1594-3	3	TERMINAL 71279 306-0212-000		3	
R	28	55-2178-39	3	FORM 92054 288-2478-000		1	
R	28A	55-2178-39	3	FORM 92054 288-2478-000 EFF THRU MCN 2594		1	
R	28A	55-6530-39	3	CORE 92054 288-2478-010 EFF MCN 2595 SB1		1	
	29	543-5679-002	3	SLEEVE, XMFR		1	
	30	543-5680-002	3	INSULATOR, SLV		1	
	31	543-5681-002	3	SHAFT, STR		1	
	32	M72-500VDC50 OMFD5PCT	2	CAPACITOR, FXD, 500 PF, 5%, 500 VDCW 53021 912-3577-000	1A1C9	1	
		P343-0382-00 0	2	SCREW, MACH., NI PL BRS, PAN HD, 3-48 X 3/16 77250 343-0382-000 AP		1	
		SPL4040-4HOT TINNED	2	TERMINAL 77147 304-0332-000 AP		1	
		310-0395-000	2	WASHER, LOCK, BRZ, 0.102 ID, 0.198 OD COML AP		1	
	33	CV11C450	2	CAPACITOR, VAR, 7 TO 45 PF, 500 VDCW 917-9006-000	1A1C6	1	
		P313-0156-00 0	2	NUT, PLAIN, HEX., NI PL BRS, 4-40 77250 313-0156-000 AP		2	
		302-0263-000	2	INSULATOR, WASH. 74921 AP		4	
		P343-0287-00 0	2	SCREW, MACH., NI PL BRS, PAN HD, 4-40 X 3/8 77250 343-0287-000 AP		2	
R	34	544-2567-000	2	SEMICONDUCTOR DEVICE SET EFF THRU MCN 2594	1A1CR4 1A1CR5	1	
R	34	544-2567-002	2	SEMICONDUCTOR DEVICE SET EFF MCN 2595 SB1	1A1CR4 1A1CR5	1	
R	34A	544-2567-000	2	SEMICONDUCTOR DEVICE SET EFF THRU MCN 2594	1A1CR6 1A1CR7	1	

FIG. - ITEM	PART NO.	INDENT.	NOMENCLATURE		UNITS PER ASSY.	USAGE CODE
R 5-3	34A RN60D5620F	2	RESISTOR, FXD, 562 OHMS 1%, 1/4 W 705-6584-000 EFF MCN 2595 SB1	1A1R10 1A1R11	2	
	35 RV5LAXSB102B	2	RESISTOR, VAR, 1000 OHMS 20%, 1/2 W 380-6291-000	1A1R8	1	
	P334-0253-00 O	2	NUT, PLAIN, HEX., NI PL BRS, 1/4-32 77250 334-0253-000 AP		1	
	1914-00	2	WASHER, LOCK, CAD. PL BRZ, 0.267 ID, 0.478 OD 78189 373-3050-000 AP		1	
	36 UG290AU	2	CONNECTOR 357-9111-000	1A1J2	1	
	P342-0747-00 O	2	SCREW, MACH., NI PL BRS, FH, 3-56 X 5/16 77250 342-0747-000 AP		4	
	37 543-5693-002	2	PLATE, CONN		1	
	38 543-5695-002	2	CONNECTOR, MODIFIED EFF THRU MCN 2263	1A1J1	1	
	38 94H3200	2	CONNECTOR 94375 357-9662-000 EFF MCN 2264	1A1J1	1	
	39 543-5694-002	2	SCREW, MACH.		4	
	39 340-0641-000	2	SLEEVE, SPG 91314 AP		4	
	310-0078-000	2	WASHER, LOCK, BRZ, 0.141 ID, 0.239 OD COML AP		4	
	40 543-5702-004	2	CHASSIS, ELECTRICAL EQUIP.		1	

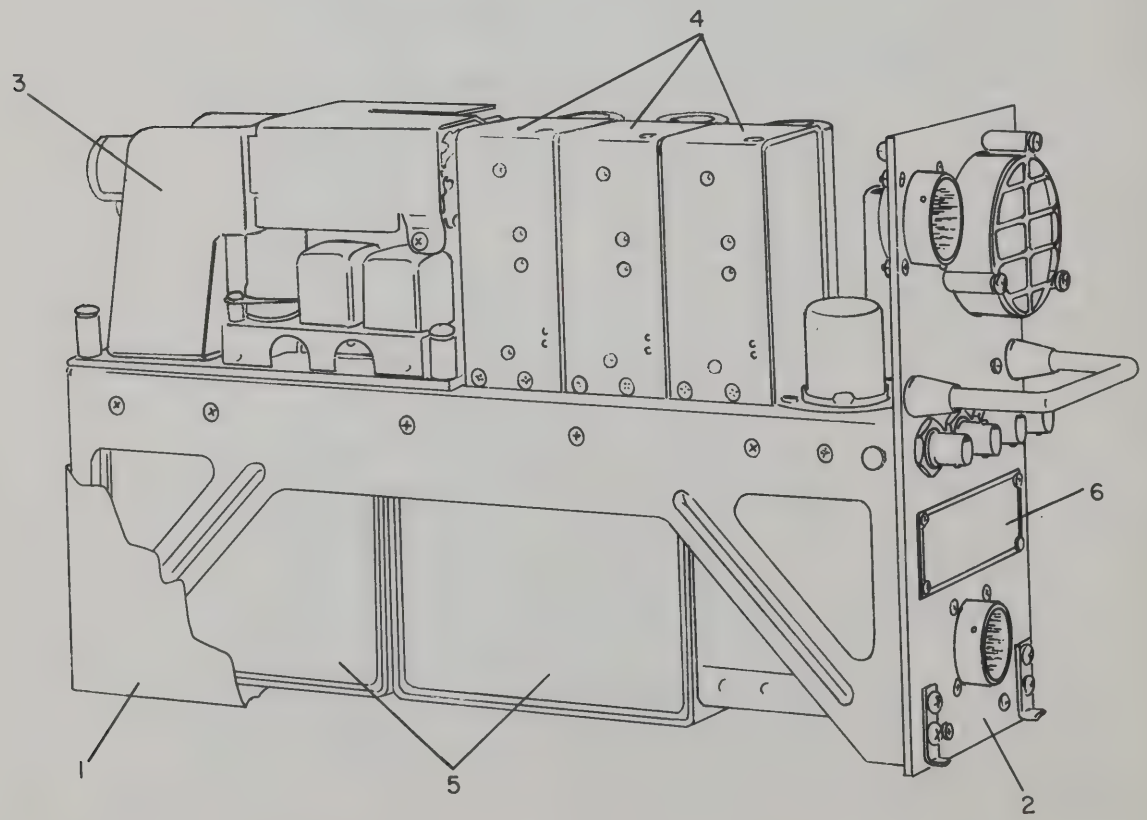


Figure 5-4. 309A-2E Antenna Coupler Control.

FIG. - ITEM	PART NO.	INDENT.	NOMENCLATURE		UNITS PER ASSY.	USAGE CODE
5-4	522-2474-004	1	309A-2E ANTENNA COUPLER CONTROL SEE FIG. 5-1-3 FOR NHA		REF	
1	542-0424-005	2	CASE		1	
	MS51957-15	2	SCREW, MACH., SST, PAN HD, 4-40 X 3/8 343-0135-000 AP		2	
2	548-5398-006	2	CHASSIS, COUPLER CONTROL SEE FIG. 5-5		1	
3	528-0154-005	2	RELAY ASSY GROUP SEE FIG. 5-6	2A6	1	
4	522-1002-004	2	ISOLATION MULTICOUPLER SEE FIG. 5-8	2A1 2A2 2A3	3	
5	543-3461-004	2	D-C SERVO AMPLIFIER SEE FIG. 5-7	2A4 2A5	2	
			OR			
5	528-0023-005	2	ELECTRONIC CONTROL AMPLIFIER SEE FIG. 5-7	2A4 2A5	2	
5	543-3461-004	2	D-C SERVO AMPLIFIER SEE FIG. 5-7 EFF THRU MCN 652	2A4 2A5	2	
5	528-0023-005	2	ELECTRONIC CONTROL AMPLIFIER SEE FIG. 5-7A EFF MCN 653	2A4 2A5	2	
5	528-0531-001	2	ELECTRONIC CONTROL AMPLIFIER SEE FIG. 5-7A EFF MCN 653	2A4 2A5	2	
6	548-5326-002	2	PLATE, IDENT		1	
	MS51957-1	2	SCREW, MACH., SST, PAN HD, 2-56 X 1/8 343-0122-000 AP		4	
R 7	548-5398-006	2	CHASSIS, COUPLER CONTROL SEE FIG. 5-5		1	
5-5	548-5398-006	1	CHASSIS, COUPLER CONTROL SEE FIG. 5-4-7 FOR NHA		REF	
1	PB02A18-32P	2	CONNECTOR 77820 371-1020-000	2J20	1	
2	P313-0051-00 0	2	NUT, PLAIN, HEX., NI PL BRS, 4-40 77250 313-0051-000 AP		4	
3	310-0076-000	2	WASHER, LOCK, BRZ, 0.115 ID, 0.212 OD COML AP		4	
4	2104-04-01-2 52UN	2	TERMINAL 78189 304-0317-000 AP		1	
5	P342-0153-00 0	2	SCREW, MACH., NI PL BRS, FH, 4-40 X 5/16 77250 342-0153-000 AP		4	
6	544-0209-002	2	GUARD, BLOWER		1	
7	P343-0336-00 0	2	SCREW, MACH., NI PL BRS, PAN HD, 6-32 X 1 77250 343-0336-000 AP		3	
8	310-0077-000	2	WASHER, LOCK, BRZ, 0.141 ID, 0.253 OD COML AP		3	
9	543-6213-000	2	SLEEVE, SPACING AP		3	
10	A0-14599A	2	FAN 82877 009-1381-000	2B1	1	
			OR			
10	VIHKE8-2C	2	FAN 19070 009-1497-000	2B1	1	
11	P343-0332-00 0	2	SCREW, MACH., NI PL BRS, PAN HD, 6-32 X 1/2 77250 343-0332-000 AP		3	
12	310-0077-000	2	WASHER, LOCK, BRZ, 0.141 ID, 0.253 OD COML AP		3	
13	540-9209-003	2	POST, ELECTRICAL-MECHANICAL EQUIP. AP		3	
14	543-6223-002	2	HANDLE		1	

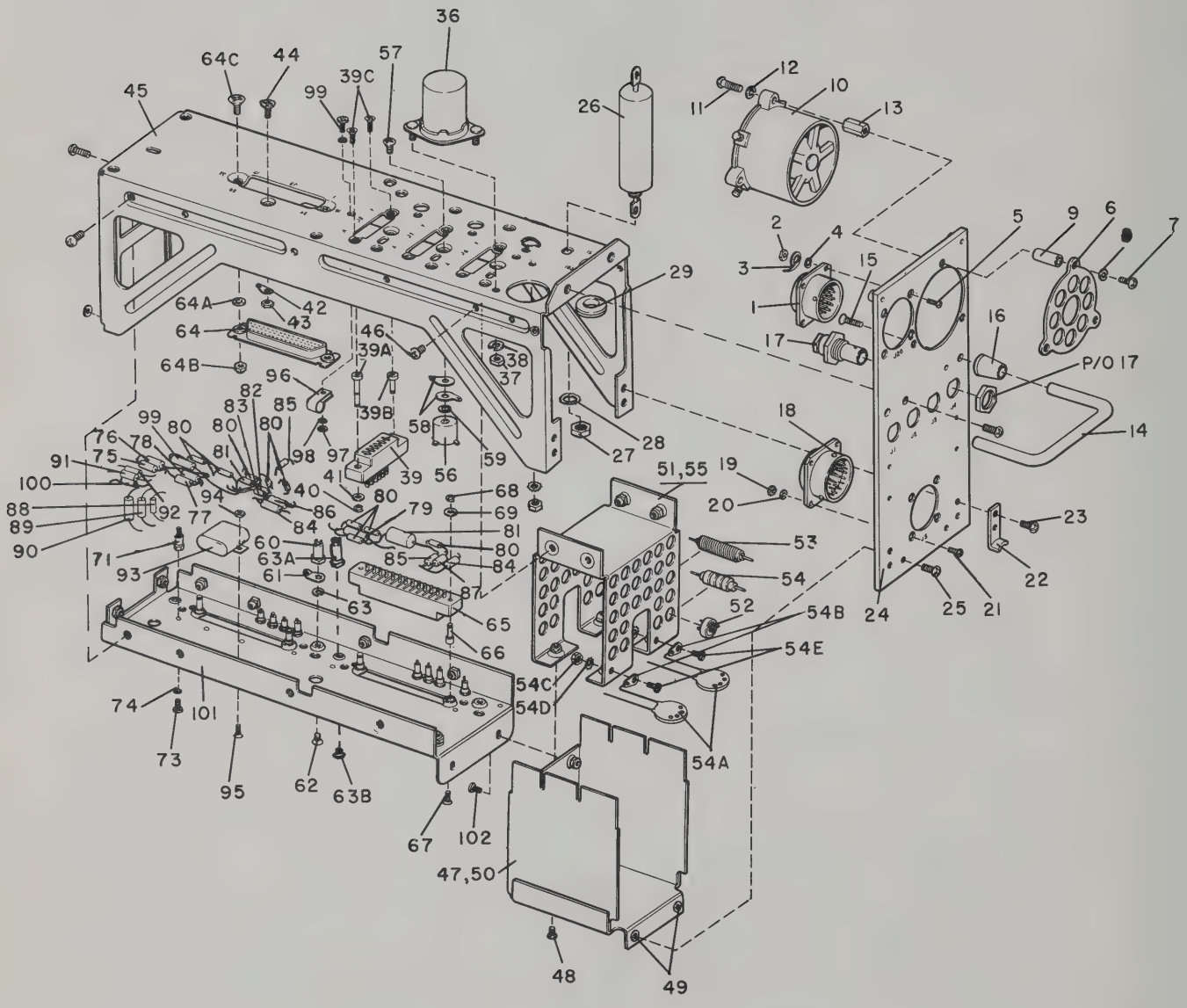


Figure 5-5. Coupler Control Chassis.

FIG. - ITEM	PART NO.	INDENT.	NOMENCLATURE		UNITS PER ASSY.	USAGE CODE
5-5 15	MS51959-45	2	SCREW, MACH., SST, FH, 8-32 X 1/2 342-0080-000 AP		2	
16	541-7455-002	2	STOP, HANDLE AP		2	
17	100B3000C75	2	CONNECTOR 94375 357-9248-000	2J1-2J4	4	
	543-6215-000	2	CABLE, LOWER		1	
18	PB02A16-26P	3	CONNECTOR 77820 371-1000-000	2J5	1	
19	P313-0051-000	3	NUT, PLAIN, HEX., NI PL BRS, 4-40 77250 313-0051-000 AP		4	
20	310-0076-000	3	WASHER, LOCK, BRZ, 0.115 ID, 0.212 OD COML AP		4	
21	P342-0153-000	3	SCREW, MACH., NI PL BRS, FH, 4-40 X 5/16 77250 342-0153-000 AP		4	
22	503-4970-001	2	BRACKET, ANGLE		2	
23	P343-0331-000	2	SCREW, MACH., NI PL BRS, PAN HD, 6-32 X 7/16 77250 343-0331-000 AP		4	
24	543-6219-002	2	PANEL, FRONT		1	
25	P343-0287-000	2	SCREW, MACH., NI PL BRS, PAN HD, 4-40 X 3/8 77250 343-0287-000 AP		4	
26	P36713	2	CAPACITOR, FXD, 0.56 UF 10%, 400 VDCW 56289 931-3341-000	2C51	1	
27	P334-0249-000	2	NUT, PLAIN, HEX., SST, 5/16-24 77250 334-0249-000 AP		1	
28	MS35335-62	2	WASHER, LOCK, SST, 0.332 ID, 0.601 OD 373-8060-000 AP		1	
29	911	2	GROMMET 75543 201-1080-000		1	
30		1	DELETED			
31		1	DELETED			
32		1	DELETED			
33		1	DELETED			
34		1	DELETED			
35		1	DELETED			
36	26SM12P	2	RELAY 99699 974-0551-000	2K1	1	
37	P313-0045-000	2	NUT, PLAIN, HEX., SST, 6-32 77250 313-0045-000 AP		2	
38	310-0077-000	2	WASHER, LOCK, BRZ, 0.141 ID, 0.253 OD COML AP		2	
39	143-006-01	2	CONNECTOR 02660 372-1581-000	2J6-2J8	3	
39A	544-6119-002	2	POST, MTG		3	
39B	544-6110-002	2	POST, MTG		3	
39C	MS51959-1	2	SCREW, MACH., SST, FH, 2-56 X 1/8 342-0131-000 AP FOR 39A AND 39B		6	
40	5133-9C	2	RING 79136 340-0249-000 AP FOR 39A AND 39B		6	
41	506-7367-002	2	WASHER, FLAT AP FOR 39A AND 39B		6	
42	2104-04-01-2 520N	2	TERMINAL 78189 304-0317-000		3	
43	68NM40	2	NUT, SELF-LKG, HEX., AL, 4-40 72962 333-0347-000 AP		3	
44	P343-0285-000	2	SCREW, MACH., NI PL BRS, PAN HD, 4-40 X 1/4 77250 343-0285-000 AP		3	
45	548-5328-003	2	CHASSIS, FRAME		1	
46	MS51959-13	2	SCREW, MACH., SST, FH, 4-40 X 1/4 342-0044-000 AP		6	
47	543-6222-002	2	COVER, FIL		1	
48	MS51957-13	2	SCREW, MACH., SST, PAN HD, 4-40 X 1/4 343-0133-000 AP		4	

	FIG. - ITEM	PART NO.	INDENT.	NOMENCLATURE		UNITS PER ASSY.	USAGE CODE
5-5	49	68NC1-40	3	NUT, SELF-LKG, CLINCH, AL, 4-40 72962 333-0197-000		4	
	50	543-6230-003	3	COVER, FIL		1	
	51	548-5396-003	2	FILTER ASSY		1	
R	52	2856005X5U01 02P	3	CAPACITOR, FXD, 1000 PF 2%, 500 VDCW 72982 913-1476-000	2C1-2C50	50	
	53	543-6217-002	3	CHOKE	2L8 2L14 2L17 2L23, 2L24	5	4
	54	18-1117	3	COIL, RF, 2 MH 09250 240-0134-000	2L1-2L7 2L9-2L13 2L15,2L16 2L18 2L20-2L22 2L25	19	
	54A	CK63AW103M	3	CAPACITOR, FXD, 10,000 PF 20%, 500 VDCW 913-1188-000	2C62,2C63	2	
	54B	4007-6HOTTIN NED	3	TERMINAL 77147 304-0016-000		2	
	54C	P313-0156-00 0	3	NUT, PLAIN, HEX., NI PL BRS, 4-40 77250 313-0156-000 AP		2	
	54D	1804-00	3	WASHER, LOCK, CAD. PL BRZ, 0.123 ID, 0.255 OD 78189 373-7010-000 AP		2	
	54E	P343-0284-00 0	3	SCREW, MACH., NI PL BRS, PAN HD, 4-40 X 3/16 77250 343-0284-000 AP		2	
	55	543-6221-002	3	CHASSIS, FIL		1	
	56	543-7318-002	2	TRANSFORMER, RF	2T1	1	
	57	P343-0284-00 0	2	SCREW, MACH., NI PL BRS, PAN HD, 4-40 X 3/16 77250 343-0284-000 AP		1	
	58	2104-04-01-2 520N	2	TERMINAL 78189 304-0317-000 AP		2	
	59	310-0076-000	2	WASHER, LOCK, BRZ, 0.115 ID, 0.212 OD COML AP		1	
	60	ST1050-34	2	TERMINAL 11707 306-0091-000		2	
	61	2104-04-01-2 520N	2	TERMINAL 78189 304-0317-000		2	
	62	P343-0284-00 0	2	SCREW, MACH., NI PL BRS, PAN HD, 4-40 X 3/16 77250 343-0284-000 AP FOR 60 AND 61		2	
	63	310-0076-000	2	WASHER, LOCK, BRZ, 0.115 ID, 0.212 OD COML AP FOR 60 AND 61		2	
	63A	ST1050-34	2	TERMINAL 11707 306-0091-000		1	
	63B	P343-0284-00 0	2	SCREW, MACH., NI PL BRS, PAN HD, 4-40 X 3/16 77250 343-0284-000 AP		1	
		548-5392-000	2	CABLE, UPPER		1	
	64	DAH15P0021A1 58	3	CONNECTOR 71468 371-0044-000	2J9	1	
	64A	544-7050-002	3	SPACER, SLV		2	
	64B	68-1660-26	3	NUT, SELF-LKG, HEX., AL, 2-56 72962 333-0604-000 AP FOR 64 AND 64A		2	
	64C	MS51959-6	3	SCREW, MACH., SST, FH, 2-56 X 7/16 342-0136-000 AP FOR 64 AND 64A		2	
	65	143-012-01	3	CONNECTOR 02660 372-1586-000	2J10,2J11	2	
	66	544-6111-002	3	POST, MTG		4	

FIG. - ITEM		PART NO.	INDENT.	NOMENCLATURE		UNITS PER ASSY.	USAGE CODE
5-5	67	MS51959-1	3	SCREW, MACH., SST, FH, 2-56 X 1/8 342-0131-000 AP FOR 65 AND 66		4	
	68	5133-9C	3	RING 79136 340-0249-000 AP FOR 65 AND 66		4	
	69	506-7367-002	3	WASHER, FLAT AP FOR 65 AND 66		4	
	70		1	DELETED			
	71	4D4A12	2	TERMINAL 92825 306-0348-000		8	
	72		1	DELETED			
	73	P342-0141-000	2	SCREW, MACH., NI PL BRS, FH, 2-56 X 1/8 77250 342-0141-000 AP FOR 71		8	
	74	1902-00CADPL	2	WASHER, LOCK, CAD. PL BRZ, 0.095 ID, 0.185 OD 78189 373-3120-000 AP FOR 71		8	
	75	RN65D8251F	2	RESISTOR, FXD, 8250 OHMS 1%, 1/2 W 705-7140-000	2R7	1	
	76	RN65D2151F	2	RESISTOR, FXD, 2150 OHMS 1%, 1/2 W 705-7112-000	2R8	1	
	77	RN65D2611F	2	RESISTOR, FXD, 2610 OHMS 1%, 1/2 W 705-7116-000	2R6	1	
	78		1	DELETED			
	79	RC32GF103K	2	RESISTOR, FXD, 10,000 OHMS 10%, 1 W 745-3394-000	2R4 2R10	2	
	80	CK14AX103M	2	CAPACITOR, FXD, 10,000 PF 20%, 100 VDCW 913-3021-000	2C52-2C60	9	
	81	DM0073	2	COIL, RF, 500 MH 99800 240-0073-000	2L26,2L27	2	
	82	RN65D3161F	2	RESISTOR, FXD, 3160 OHMS 1%, 1/2 W 705-7120-000	2R14	1	
	83	RN65D1621F	2	RESISTOR, FXD, 1620 OHMS 1%, 1/2 W 705-7106-000	2R13	1	
	84	RN65D1213F	2	RESISTOR, FXD, 0.121 OHMS 1%, 1/2 W 705-7196-000	2R1,2R2	2	
	85	RN65D1962F	2	RESISTOR, FXD, 19,600 OHMS 1%, 1/2 W 705-7158-000	2R3 2R9	2	
	86	RN65D4640F	2	RESISTOR, FXD, 464 OHMS 1%, 1/2 W 705-7080-000	2R11	1	
	87	RN65D3830F	2	RESISTOR, FXD, 383 OHMS 1%, 1/2 W 705-7076-000	2R12	1	
	88	RN65D1102F	2	RESISTOR, FXD, 11,000 OHMS 1%, 1/2 W 705-7146-000	2R15	1	
	89	RN65D9091F	2	RESISTOR, FXD, 9090 OHMS 1%, 1/2 W 705-7142-000	2R16	1	
	90	RN65D1471F	2	RESISTOR, FXD, 1470 OHMS 1%, 1/2 W 705-7104-000	2R18	1	
	91	RN65D4222F	2	RESISTOR, FXD, 42,200 OHMS 1%, 1/2 W 705-7174-000	2R17	1	
	92	RN65D6811F	2	RESISTOR, FXD, 6810 OHMS 1%, 1/2 W 705-7136-000	2R19	1	
	93	3SAE2057A2	2	RELAY 01526 974-0655-000	2K2	1	
	94	68-1660-26	2	NUT, SELF-LKG, HEX., AL, 2-56 72962 333-0604-000 AP		2	
	95	MS51959-3	2	SCREW, MACH., SST, FH, 2-56 X 1/4 342-0133-000 AP		2	
	96	HP8N	2	CLAMP 09922 150-1545-000		1	
	97	68NM40	2	NUT, SELF-LKG, HEX., AL, 4-40 72962 333-0347-000 AP		1	
	98	310-0045-000	2	WASHER, FLAT, SST, 0.125 ID, 0.312 OD COML AP		1	

	FIG. - ITEM	PART NO.	INDENT.	NOMENCLATURE		UNITS PER ASSY.	USAGE CODE
5-5	99	MS51959-15	2	SCREW, MACH., SST, FH, 4-40 X 3/8 342-0046-000 AP		1	
	100	CL37BD160MN3	2	CAPACITOR, FXD, 16 UF 20%, 10 VDCW 184-7232-000	2C61	1	
	101	543-6225-003	2	CHASSIS, FRAME, LOWER		1	
	102	MS51957-13	2	SCREW, MACH., SST, PAN HD, 4-40 X 1/4 343-0133-000 AP		2	
5-6		528-0154-005	1	RELAY ASSY GROUP SEE FIG. 5-4-3 FOR NHA	2A6	REF	
	1	543-5967-002	2	SCREW, SPL		4	
	2	340-0642-000	2	SLEEVE, SPG 91314 AP		4	
	3	MS35338-137	2	WASHER, LOCK, SST, 0.168 ID, 0.296 OD 310-0072-000 AP		4	
	4	GT2839	2	RELAY 93929 402-0334-000	2A6K8	1	
	5	MS51959-13	2	SCREW, MACH., SST, FH, 4-40 X 1/4 342-0044-000 AP		2	
	6	MS35338-135	2	WASHER, LOCK, SST, 0.115 ID, 0.212 OD 310-0279-000 AP		2	
	7	540-9172-003	2	POST, ELECTRICAL-MECHANICAL EQUIP. AP		2	
	8	MS51957-13	2	SCREW, MACH., SST, PAN HD, 4-40 X 1/4 343-0133-000 AP		2	
R	9	26SM12P	2	RELAY 99699 974-0551-000 EFF THRU MCN 845	2A6K7	1	
R	9	26SM12AR	2	RELAY 99699 974-1090-010 EFF MCN 846	2A6K7	1	
	10	69SM12C	2	RELAY 13573 974-0653-000	2A6K4-2A6K6	3	
	11	P313-0045-00 0	2	NUT, PLAIN, HEX., SST, 6-32 77250 313-0045-000 AP FOR 9 AND 10		8	
	12	MS35338-136	2	WASHER, LOCK, SST, 0.141 ID, 0.253 OD 310-0282-000 AP FOR 9 AND 10		8	
	13	2104-06-02-2 520N	2	TERMINAL 78189 304-0318-000 AP FOR 9 AND 10		1	
	14	543-5957-002	2	NUT, SPL AP FOR 9 AND 10		3	
	15	543-5956-002	2	POST AP FOR 9 AND 10		3	
	16	541-5180-002	2	BUTTON, CABLE		1	
	17	MS51957-18	2	SCREW, MACH., SST, PAN HD, 4-40 X 5/8 343-0138-000 AP		1	
	18	541-5966-002	2	SPACER, SLV AP		1	
	19	310-0045-000	2	WASHER, FLAT, SST, 0.125 ID, 0.312 OD COML AP		1	
	20	548-5325-002	2	BRACKET, RELAY		1	
	21	MS51959-13	2	SCREW, MACH., SST, FH, 4-40 X 1/4 342-0044-000 AP		4	
	22	RSM2-121ROG	2	RESISTOR, FXD, 121 OHMS 3%, 3 W 91637 747-9670-000	2A6R7 2A6R8	AR	
	22	RSM2-133ROG	2	RESISTOR, FXD, 133 OHMS 3%, 3 W 91637 747-9671-000	2A6R7 2A6R8	AR	
	22	RSM2-150ROG	2	RESISTOR, FXD, 150 OHMS 3%, 3 W 91637 747-9660-000	2A6R7 2A6R8	AR	
	22	RSM2-162ROG	2	RESISTOR, FXD, 162 OHMS 3%, 3 W 91637 747-9672-000	2A6R7 2A6R8	AR	

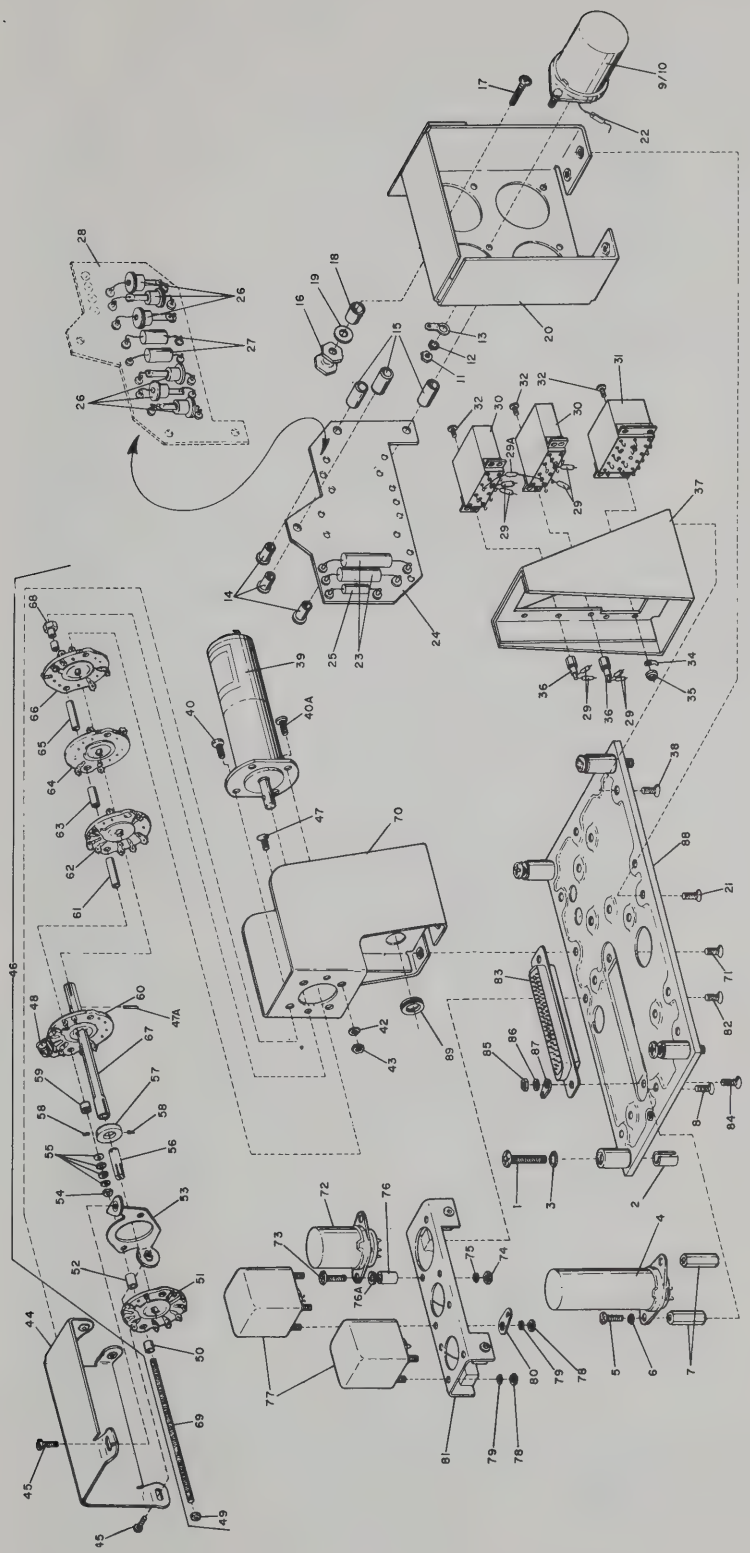


Figure 5-6. Relay Assembly Group.

	FIG. - ITEM	PART NO.	INDENT.	NOMENCLATURE		UNITS PER ASSY.	USAGE CODE
5-6	22	RSM2-178ROG	2	RESISTOR, FXD, 178 OHMS 3%, 3 W 91637 747-9673-000	2A6R7 2A6R8	AR	
	22	RSM2-196ROG	2	RESISTOR, FXD, 215 OHMS 3%, 3 W 91637 747-9674-000	2A6R7 2A6R8	AR	
	22	RSM2-215ROG	2	RESISTOR, FXD, 215 OHMS 3%, 3 W 91637 747-9675-000	2A6R7 2A6R8	AR	
	22	RSM2-237ROG	2	RESISTOR, FXD, 237 OHMS 3%, 3 W 91637 747-9676-000	2A6R7 2A6R8	AR	
	22	RSM2-261ROG	2	RESISTOR, FXD, 261 OHMS 3%, 3 W 91637 747-9677-000	2A6R7 2A6R8	AR	
	22	RSM2-287ROG	2	RESISTOR, FXD, 287 OHMS 3%, 3 W 91637 747-9678-000	2A6R7 2A6R8	AR	
	22	RSM2-316ROG	2	RESISTOR, FXD, 316 OHMS 3%, 3 W 91637 747-9679-000	2A6R7 2A6R8	AR	
	22	RSM2-348ROG	2	RESISTOR, FXD, 348 OHMS 3%, 3 W 91637 747-9680-000	2A6R7 2A6R8	AR	
	22	RSM2-383ROG	2	RESISTOR, FXD, 383 OHMS 3%, 3 W 91637 747-9681-000	2A6R7 2A6R8	AR	
	22	RSM2-422ROG	2	RESISTOR, FXD, 422 OHMS 3%, 3 W 91637 747-9682-000	2A6R7 2A6R8	AR	
	22	RSM2-464ROG	2	RESISTOR, FXD, 464 OHMS 3%, 3 W 91637 747-9683-000	2A6R7 2A6R8	AR	
	22	RSM2-511ROG	2	RESISTOR, FXD, 511 OHMS 3%, 3 W 91637 747-9684-000	2A6R7 2A6R8	AR	
	23	RS5-41510ROH	2	RESISTOR, FXD, 510 OHMS 3%, 5 W 91637 747-9727-000	2A6R2 2A6R3	AR	
	23	RS5141560ROH	2	RESISTOR, FXD, 560 OHMS 3%, 5 W 91637 747-9701-000	2A6R2 2A6R3	AR	
	23	RS5-41620ROH	2	RESISTOR, FXD, 620 OHMS 3%, 5 W 91637 747-9728-000	2A6R2 2A6R3	AR	
	23	RS5-41680ROH	2	RESISTOR, FXD, 680 OHMS 3%, 5 W 91637 747-9729-000	2A6R2 2A6R3	AR	
	23	RS5-41750ROH	2	RESISTOR, FXD, 750 OHMS 3%, 5 W 91637 747-9730-000	2A6R2 2A6R3	AR	
	23	RS5-830ROG	2	RESISTOR, FXD, 830 OHMS 3%, 5 W 91637 747-9422-000	2A6R2 2A6R3	AR	
	23	RS5-41910ROH	2	RESISTOR, FXD, 910 OHMS 3%, 5 W 91637 747-9731-000	2A6R2 2A6R3	AR	
	23	RS5-10000G	2	RESISTOR, FXD, 1000 OHMS 3%, 5 W 91637 747-9396-000	2A6R2 2A6R3	AR	
	23	RSM5-450H	2	RESISTOR, FXD, 450 OHMS 5%, 6.5 W 91637 747-5453-000	2A6R2 2A6R3	AR	
	24	548-5329-003	2	BOARD, RELAY		1	
	25	RC20GF220K	3	RESISTOR, FXD, 22 OHMS 10%, 1/2 W 745-1282-000	2A6R4	1	
R	26	1N1095	3	SEMICOND DEVICE 353-1547-000 EFF THRU MCN 845	2A6CR3- 2A6CR5 2A6CR7 2A6CR9 2A6CR10	6	
R	26	1N4005	3	SEMICOND DEVICE 353-6442-050 EFF MCN 846	2A6CR3- 2A6CR5 2A6CR7 2A6CR9 2A6CR10	6	
	27	CL25BN080SP3	3	CAPACITOR, FXD, 8 UF P30M15%, 100 VDCW 184-7248-000	2A6C1 2A6C2	2	
	28	548-5395-002	3	PLATE, MTG		1	

FIG. - ITEM	PART NO.	INDENT.	NOMENCLATURE		UNITS PER ASSY.	USAGE CODE
5-6 29	1N458	2	SEMICOND DEVICE 353-0205-000	2A6CR1 2A6CR2 2A6CR6 2A6CR8 2A6CR12-2A6CR15	8	
29A	Rw69V681	2	RESISTOR, FXD, 680 OHMS 5%, 3 W 747-5394-000	2A6R1	1	
30	94554	2	RELAY 78277 408-1104-000	2A6K10, 2A6K11	2	
31	3S2791FB100K OC	2	RELAY 01526 974-0731-000	2A6K9	1	
32	P347-0021-00 0	2	SCREW, MACH., SST, FIL H, 2-56 X 3/16 77250 347-0021-000 AP FOR 30 AND 31		5	
33	MS35338-134	2	WASHER, LOCK, SST, 0.088 ID, 0.175 OD 310-0275-000 AP FOR 30 AND 31		5	
34	4040-2HOTTIN NED	2	TERMINAL 77147 304-0014-000 AP FOR 30 AND 31		2	
35	68-1660-26	2	NUT, SELF-LKG, HEX., AL, 2-56 72962 333-0604-000 AP FOR 30 AND 31		3	
36	RB1153	2	TERMINAL 59730 304-0348-000 AP FOR 30 AND 31		5	
37	548-4040-003	2	BRACKET, RELAY		1	
38	MS51957-3	2	SCREW, MACH., SST, PAN HD, 2-56 X 1/4 343-0124-000 AP		3	
39	43A159	2	MOTOR 25140 230-0284-000 OR	2A6B1	1	
39	43A159	2	MOTOR 25140 230-0284-000	2A6B1	1	
40	P347-0035-00 0	2	SCREW, MACH., SST, FIL H, 6-32 X 3/8 77250 347-0035-000 AP		3	
40A	P347-0043-00 0	2	SCREW, MACH., SST, FIL H, 6-32 X 1-1/4 77250 347-0043-000 AP		1	
41		1	DELETED			
42	MS35338-136	2	WASHER, LOCK, SST, 0.141 ID, 0.253 OD 310-0282-000 AP		1	
43	P313-0045-00 0	2	NUT, PLAIN, HEX., SST, 6-32 77250 313-0045-000 AP		1	
44	545-2785-002	2	COVER, SWITCH		1	
45	MS51957-13	2	SCREW, MACH., SST, PAN HD, 4-40 X 1/4 343-0133-000 AP		2	
45A	310-0045-000	2	WASHER, FLAT, SST, 0.125 ID, 0.312 OD COML AP		2	
46	548-5330-004	2	SWITCH, ROT.		1	
47	MS51959-12	2	SCREW, MACH., SST, FH, 4-40 X 3/16 342-0043-000 AP		2	
47A	MS16562-190	2	PIN, SPG, SST, 0.062 DIA X 1/4 LG 311-0417-000 AP		1	
48	1N1095	3	SEMICOND DEVICE 353-1547-000 EFF THRU MCN 869	2A6CR11	1	
48	1N4004	3	SEMICOND DEVICE 353-6442-040 EFF MCN 870	2A6CR11	1	
49	68-1660-40	3	NUT, SELF-LKG, HEX., AL, 4-40 72962 333-0605-000		2	
50	8980-2 1-8	3	SPACER 76854 269-1401-000		2	
51	210644F	3	SWITCH SECTION 76854 269-2146-000 EFF THRU MCN 869	2A6S1	1	
51	264672F	3	SWITCH SECTION 76854 269-2146-010 EFF MCN 870	2A6S1	1	
52	8980-2 1-4	3	SPACER 76854 269-1403-000		2	

FIG. - ITEM		PART NO.	INDENT.	NOMENCLATURE		UNITS PER ASSY.	USAGE CODE
5-6	53	545-2786-002	3	BRACKET, COVER		1	
	54	P313-0132-00 0	3	NUT, PLAIN, HEX., SST, 4-40 77250 313-0132-000		2	
	55	543-5602-003	3	WASHER		AR	
	56	543-5946-002	3	SHAFT, ADJUSTING		1	
	57	543-5948-002	3	COUPLING AP		1	
	58	4-48X1-8 6SP LINEOVPT18-8 SST	3	SETSCREW, SST, 4-48 X 1/8 08664 335-0019-000 AP		2	
	59	8980-2 1-8	3	SPACER 76854 269-1401-000		2	
	60	183313F	3	SWITCH SECTION 76854 269-1956-000	2A6S2	1	
	61	8980-2 1-2	3	SPACER 76854 269-1407-000		2	
	62	183314F	3	SWITCH SECTION 76854 269-1957-000	2A6S3	1	
	63	8980-2 3-8	3	SPACER 76854 269-1405-000		2	
	64	183315F	3	SWITCH SECTION 76854 269-1958-000	2A6S4	1	
	65	8980-2 1-2	3	SPACER 76854 269-1407-000		2	
	66	222491F	3	SWITCH SECTION 76854 269-2294-000	2A6S5	1	
	67	543-5947-002	3	SHAFT, SWITCH		1	
	68	543-5955-002	3	POST		2	
	69	P312-0028-00 0	3	STUD, CONTINUOUS THD, SST, 4-40 X 2-3/4 77250 312-0028-000 AP		2	
	70	548-5400-003	2	BRACKET, MOTOR		1	
	71	MS51959-13	2	SCREW, MACH., SST, FH, 4-40 X 1/4 342-0044-000 AP		4	
	72	FR120SN0-115	2	RELAY 06151 402-0321-000	2A6K3	1	
	73	MS51957-16	2	SCREW, MACH., SST, PAN HD, 4-40 X 7/16 343-0136-000 AP		2	
	74	P313-0132-00 0	2	NUT, PLAIN, HEX., SST, 4-40 77250 313-0132-000 AP		2	
	75	MS35338-135	2	WASHER, LOCK, SST, 0.115 ID, 0.212 OD 310-0279-000 AP		2	
R	76	541-5978-002	2	SPACER, SLV AP		2	
	76A	310-6340-000	2	WASHER, FLAT, SST, 0.125 ID, 0.281 OD COML AP		2	
	77	515951	2	RELAY 44038 974-0449-000	2A6K1, 2A6K2	2	
	78	P313-0132-00 0	2	NUT, PLAIN, HEX., SST, 4-40 77250 313-0132-000 AP		6	
	79	MS35338-135	2	WASHER, LOCK, SST, 0.115 ID, 0.212 OD 310-0279-000 AP		6	
	80	SPL4040-4HOT TINNED	2	TERMINAL 77147 304-0332-000 AP		1	
	81	543-5966-002	2	BRACKET, RELAY		1	
	82	MS51959-15	2	SCREW, MACH., SST, FH, 4-40 X 3/8 342-0046-000 AP		4	
	83	DD50P	2	CONNECTOR 71468 371-0033-000	2A6P1	1	
	84	P342-0144-00 0	2	SCREW, MACH., NI PL BRS, FH, 2-56 X 5/16 77250 342-0144-000 AP		2	
	85	P313-0050-00 0	2	NUT, PLAIN, HEX., NI PL BRS, 2-56 77250 313-0050-000 AP		2	
	86	310-0074-000	2	WASHER, LOCK, BRZ, 0.088 ID, 0.175 OD COML AP		2	
	87	4040-2HOTTIN NED	2	TERMINAL 77147 304-0014-000 AP		4	
	88	548-5323-002	2	PLATE, MTG		1	

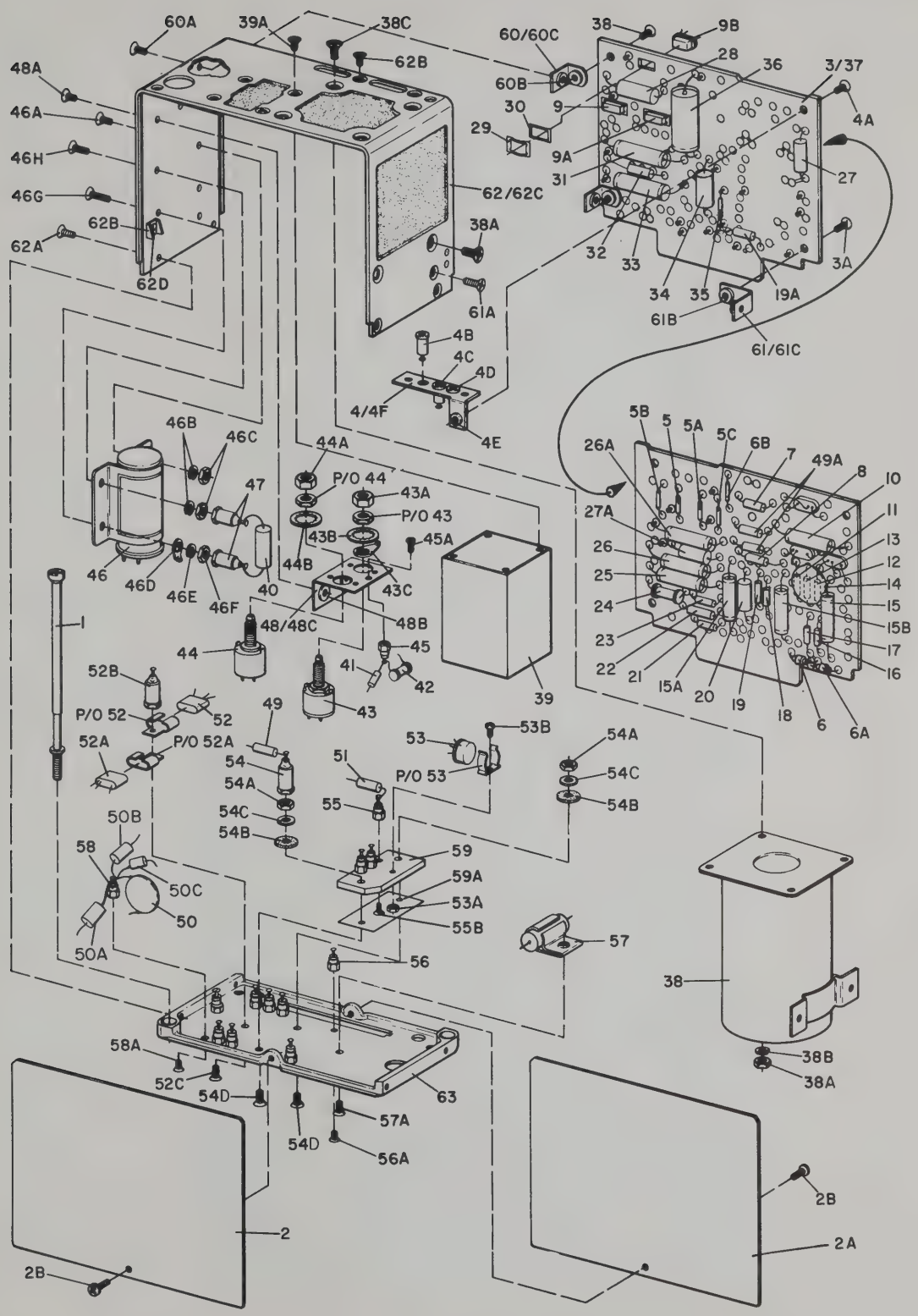


Figure 5-7. DC Servo Amplifier and Electronic Control Amplifier.

FIG. - ITEM	PART NO.	INDENT.	NOMENCLATURE		UNITS PER ASSY.	USAGE CODE
5-7 * -	543-3461-004	1	D-C SERVO AMPLIFIER SEE FIG. 5-4-5 FOR NHA	2A4 2A5	REF	A
5-7 -	528-0023-005	1	ELECTRONIC CONTROL AMPLIFIER SEE FIG. 5-4-5 FOR NHA	2A4 2A5	REF	B
1	542-7682-002	2	SCREW, SHOULDERED		2	
2	542-7695-003	2	PLATE, COVER		1	B
2A	542-7695-003	2	PLATE, COVER EFF THRU MOD D		1	A
2A	549-0267-002	2	PLATE, COVER EFF MOD E SB11		1	A
2A	549-0267-002	2	PLATE, COVER		1	B
2B	MS51959-12	2	SCREW, MACH., SST, FH, 4-40 X 3/16 342-0043-000 AP FOR 2 AND 2A		2	
3	546-7852-005	2	AMPLIFIER SUBASSEMBLY		1	B
3	543-5761-004	2	BOARD, DC EFF THRU MOD D		1	A
3	546-7852-005	2	AMPLIFIER SUBASSEMBLY EFF MOD E SB11		1	A
3A	P343-0285-00 0	2	SCREW, MACH., NI PL BRS, PAN HD, 4-40 X 1/4 77250 343-0285-000 AP		3	
4	543-5714-002	3	BRACKET, TEST POINT		1	
4A	MS51957-13	3	SCREW, MACH., SST, PAN HD, 4-40 X 1/4 343-0133-000 AP		1	
4B	SKT2BC	4	JACK 98291 360-0087-000	2A4J1 2A5J1	1	
4C	SKT2BC	4	JACK 98291 360-0087-000	2A4J2 2A5J2	1	
4D	SKT2BC	4	JACK 98291 360-0087-000	2A4J3 2A5J3	1	
4E	CL440-1C	4	NUT, PLAIN, CLINCH, CAD. PL STL, 4-40 46384 334-0062-000		3	
4F	543-5713-002	4	BRACKET, TEST POINT		1	
5	1N647	3	SEMICOND DEVICE 353-2596-000 EFF THRU MOD D	2A4CR4 2A5CR4	1	A
5	1N647	3	SEMICOND DEVICE 353-2596-000 EFF MOD E	2A4CR4 2A5CR4	1	A
5	1N647	3	SEMICOND DEVICE 353-2596-000	2A4CR4 2A5CR4	1	B
5A	1N647	3	SEMICOND DEVICE 353-2596-000 EFF THRU MOD D	2A4CR5 2A5CR5	1	A
5A	1N647	3	SEMICOND DEVICE 353-2596-000 EFF MOD E	2A4CR5 2A5CR5	1	A
5A	1N647	3	SEMICOND DEVICE 353-2596-000	2A4CR5 2A5CR5	1	B
5B	1N647	3	SEMICOND DEVICE 353-2596-000 EFF THRU MOD D	2A4CR6 2A5CR6	1	A
5B	1N647	3	SEMICOND DEVICE 353-2596-000 EFF MOD E	2A4CR6 2A5CR6	1	A
5B	1N647	3	SEMICOND DEVICE 353-2596-000	2A4CR6 2A5CR6	1	B
5C	1N647	3	SEMICOND DEVICE 353-2596-000 EFF THRU MOD D	2A4CR7 2A5CR7	1	A
5C	1N647	3	SEMICOND DEVICE 353-2596-000 EFF MOD E	2A4CR7 2A5CR7	1	A
5C	1N647	3	SEMICOND DEVICE 353-2596-000	2A4CR7 2A5CR7	1	B
6	1N461	3	SEMICOND DEVICE 353-0200-000	2A4CR1 2A5CR1	1	

*FOR REFERENCE ONLY. FOR REPLACEMENT ORDER 528-0023-005.

FIG. - ITEM	PART NO.	INDENT.	NOMENCLATURE		UNITS PER ASSY.	USAGE CODE
5-7	6A 1N461	3	SEMICOND DEVICE 353-0200-000	2A4CR2 2A5CR2	1	
	6B 1N461	3	SEMICOND DEVICE 353-0200-000	2A4CR3 2A5CR3	1	
	7 RC20GF124K	3	RESISTOR, FXD, 0.12 MEG 10%, 1/2 W 745-1440-000	2A4R6 2A5R6	1	
	8 RC20GF332K	3	RESISTOR, FXD, 3300 OHMS 10%, 1/2 W 745-1373-000	2A4R15 2A5R15	1	
	9 2N1150	3	TRANSISTOR 352-0076-000	2A4Q1 2A5Q1	1	
	9A 2N1150	3	TRANSISTOR 352-0076-000	2A4Q2 2A5Q2	1	
	9B 2N1150	3	TRANSISTOR 352-0076-000	2A4Q3 2A5Q3	1	
	10 CL21CH4R5TP3	3	CAPACITOR, FXD, 4.5 UF P50M15%, 30 VDCW 184-7276-000	2A4C5 2A5C5	1	
	11 RC20GF222K	3	RESISTOR, FXD, 2200 OHMS 10%, 1/2 W 745-1366-000	2A4R22 2A5R22	1	
	12 RC20GF102K	3	RESISTOR, FXD, 1000 OHMS 10%, 1/2 W 745-1352-000	2A4R4 2A5R4	1	
	13 RC20GF184K	3	RESISTOR, FXD, 0.18 MEG 10%, 1/2 W 745-1447-000	2A4R3 2A5R3	1	
	14 DA049-123B	3	CAPACITOR, FXD, 10,000 PF P100M20%, 500 VDCW 71590 913-3159-000 EFF MOD A	2A4C3 2A5C3	1	A
	14 DA049-123B	3	CAPACITOR, FXD, 10,000 PF P100M20%, 500 VDCW 71590 913-3159-000	2A4C3 2A5C3	1	B
	15 CL23CH2R5TN3	3	CAPACITOR, FXD, 2.5 UF P50M15%, 30 VDCW 184-7279-000	2A4C4 2A5C4	1	
	15A CL23CH2R5TN3	3	CAPACITOR, FXD, 2.5 UF P50M15%, 30 VDCW 184-7279-000	2A4C8 2A5C8	1	
	15B CL23CH2R5TN3	3	CAPACITOR, FXD, 2.5 UF P50M15%, 30 VDCW 184-7279-000	2A4C13 2A5C13	1	
	16 RC20GF473K	3	RESISTOR, FXD, 47,000 OHMS 10%, 1/2 W 745-1422-000	2A4R7 2A5R7	1	
	17 RN60D1002F	3	RESISTOR, FXD, 10,000 OHMS 1%, 1/4 W 705-6644-000	2A4R2 2A5R2	1	
	18 RC20GF104K	3	RESISTOR, FXD, 0.10 MEG 10%, 1/2 W 745-1436-000	2A4R21 2A5R21	1	
	19 RC20GF392K	3	RESISTOR, FXD, 3900 OHMS 10%, 1/2 W 745-1377-000	2A4R10 2A5R10	1	
	19A RC20GF392K	3	RESISTOR, FXD, 3900 OHMS 10%, 1/2 W 745-1377-000	2A4R23 2A5R23	1	
	20 RC32GF223K	3	RESISTOR, FXD, 22,000 OHMS 10%, 1 W 745-3408-000	2A4R8 2A5R8	1	
	21 RC20GF153K	3	RESISTOR, FXD, 15,000 OHMS 10%, 1/2 W 745-1401-000	2A4R11 2A5R11	1	
	22 RC32GF682K	3	RESISTOR, FXD, 6800 OHMS 10%, 1 W 745-3387-000	2A4R16 2A5R16	1	
	23 RC20GF272K	3	RESISTOR, FXD, 2700 OHMS 10%, 1/2 W 745-1370-000	2A4R12 2A5R12	1	
	24 763F28	3	RESISTOR, THRM, 10,000 OHMS 10%, 1 W 10646 714-0182-000	2A4RT1 2A5RT1	1	
	25 CL21CJ030TP3	3	CAPACITOR, FXD, 3 UF P50M15%, 50 VDCW 184-7287-000	2A4C10 2A5C10	1	
	26 CL23CN0R5SN3	3	CAPACITOR, FXD, 0.5 UF P30M15%, 100 VDCW 184-7294-000	2A4C11 2A5C11	1	
	26A CL23CN0R5SN3	3	CAPACITOR, FXD, 0.5 UF P30M15%, 100 VDCW 184-7294-000	2A4C12 2A5C12	1	

FIG. - ITEM		PART NO.	INDENT.	NOMENCLATURE		UNITS PER ASSY.	USAGE CODE
5-7	27	RC32GF472K	3	RESISTOR, FXD, 4700 OHMS 10%, 1 W 745-3380-000	2A4R19 2A5R19	1	
	27A	RC32GF472K	3	RESISTOR, FXD, 4700 OHMS 10%, 1 W 745-3380-000	2A4R20 2A5R20	1	
	28	196P10301S4	3	CAPACITOR, FXD, 0.01 UF 20%, 100 VDCW 56289 931-4481-000	2A4C7 2A5C7	1	
	29	541-9593-002	3	FASTENER, TSTR		3	
	30	541-9538-002	3	INSULATOR, PLATE		3	
	31	CL21CH180TP3	3	CAPACITOR, FXD, 18 UF P50M15%, 30 VDCW 184-7277-000	2A4C6 2A5C6	1	
	32	DM0073	3	COIL, RF, 500 MH 99800 240-0073-000 EFF MOD A	2A4L1 2A5L1	1	A
	32	548-9353-000	3	COIL, RF	2A4L1 2A5L1	1	B
	33	CL21CK080TP3	3	CAPACITOR, FXD, 8 UF P50M15%, 60 VDCW 184-7280-000	2A4C9 2A5C9	1	
	34	RC42GF102K	3	RESISTOR, FXD, 1000 OHMS 10%, 2 W 745-5652-000	2A4R18 2A5R19	1	
	35	1N270	3	SEMICOND DEVICE 353-2018-000 EFF MOD C	2A4CR8 2A5CR8	1	
	36	196P68392S4	3	CAPACITOR, FXD, 0.068 UF 10%, 200 VDCW 56289 931-5000-000	2A4C2 2A5C2	1	
	37	543-5730-004	3	BOARD, CIRCUIT EFF THRU MOD D		1	A
	37	546-7962-004	3	PRINTED CIRCUIT BOARD, SERVO EFF MOD E		1	A
	37	546-7962-004	3	PRINTED CIRCUIT BOARD, SERVO		1	B
	38	526-6500-000	2	SATURABLE REACTOR, 7.1 TO 13.5 MA 95105 674-5009-000	2A4MR1 2A5MR1	1	
	38A	P313-0045-000	2	NUT, PLAIN, HEX., SST, 6-32 77250 313-0045-000 AP		6	
	38B	MS35338-136	2	WASHER, LOCK, SST, 0.141 ID, 0.253 OD 310-0282-000 AP		6	
	38C	MS51959-27	2	SCREW, MACH., SST, FH, 6-32 X 5/16 342-0061-000 AP		6	
	39	28950	2	TRANSFORMER 73386 674-1018-000	2A4T1 2A5T1	1	
	39A	MS51959-13	2	SCREW, MACH., SST, FH, 4-40 X 1/4 342-0044-000 AP		4	
	40	150D105X0035 A2	2	CAPACITOR, FXD, 1 UF 20%, 35 VDCW 56289 184-7398-000 EFF THRU MOD C	2A4C15 2A5C15	1	
	40	CL33CH0R8MN3	2	CAPACITOR, FXD, 0.8 UF 20%, 30 VDCW 184-7285-000 EFF MOD D SB7	2A4C15 2A5C15	1	
	41	RC20GF333K	2	RESISTOR, FXD, 33,000 OHMS 10%, 1/2 W 745-1415-000 EFF MOD D SB7	2A4R26 2A5R26	1	
	42	763F96	2	RESISTOR, THRM, 20,000 OHMS 10%, 1 W 10646 714-0185-000	2A4RT2 2A5RT2	1	
	43	G2666	2	RESISTOR, VAR, 10,000 OHMS 20%, 1/2 W 01121 380-1660-000	2A4R5 2A5R5	1	
	43A	P334-0266-000	2	NUT, PLAIN, HEX., NI PL BRS, 1/4-32 77250 334-0266-000 AP		1	
	43B	1214-00-00-0543	2	WASHER, LOCK, CAD. PL STL, 0.267 ID, 0.478 OD 78189 373-1080-000 AP		1	
	43C	1503	2	TERMINAL 71785 304-2400-000 AP		1	
	44	G3249	2	RESISTOR, VAR, 100 OHMS 20%, 1/2 W 01121 380-1662-000	2A4R17 2A5R17	1	

FIG. - ITEM	PART NO.	INDENT.	NOMENCLATURE		UNITS PER ASSY.	USAGE CODE
5-7 44A	P334-0266-000	2	NUT, PLAIN, HEX., NI PL BRS, 1/4-32 77250 334-0266-000 AP		1	
44B	1214-00-00-0543	2	WASHER, LOCK, CAD. PL STL, 0.267 ID, 0.478 OD 78189 373-1080-000 AP		1	
45	4D4A12	2	TERMINAL 92825 306-0348-000		1	A
45	TF300	2	TERMINAL 98291 306-1018-000		1	B
45A	P343-0297-000	2	SCREW, MACH., NI PL BRS, PAN HD, 2-56 X 1/8 77250 343-0297-000 AP		1	
46	302-22	2	CHOPPER 81541 354-1022-000	2A4G1 2A5G1	1	
46A	MS51959-13	2	SCREW, MACH., SST, FH, 4-40 X 1/4 342-0044-000 AP		2	
46B	MS35338-135	2	WASHER, LOCK, SST, 0.115 ID, 0.212 OD 310-0279-000 AP		3	
46C	MS35649-44	2	NUT, PLAIN, HEX., SST, 4-40 313-0043-000 AP		3	
46D	2104-04-01-2520N	2	TERMINAL 78189 304-0317-000 AP		1	
46E	310-0396-000	2	WASHER, LOCK, BRZ, 0.115 ID, 0.202 OD COML AP		1	
46F	P313-0051-000	2	NUT, PLAIN, HEX., NI PL BRS, 4-40 77250 313-0051-000 AP		1	
46G	P342-0153-000	2	SCREW, MACH., NI PL BRS, FH, 4-40 X 5/16 77250 342-0153-000 AP		1	
46H	MS51959-14	2	SCREW, MACH., SST, FH, 4-40 X 5/16 342-0045-000 AP		1	
47	ST1050-34	2	TERMINAL 11707 306-0091-000 AP		2	A
47	RTMT12M	2	TERMINAL 91663 306-0976-000 AP		2	B
48	543-5718-002	2	BRACKET, RESISTOR		1	
48A	MS51959-13	2	SCREW, MACH., SST, FH, 4-40 X 1/4 342-0044-000 AP		2	
48B	CL440-1C	3	NUT, PLAIN, CLINCH, CAD. PL STL, 4-40 46384 334-0062-000		2	
48C	543-5717-002	3	BRACKET, RESISTOR		1	
49	RC20GF623J	2	RESISTOR, FXD, 62,000 OHMS 5%, 1/2 W 745-1427-000	2A4R13 2A5R13	AR	B
49	RC20GF683J	2	RESISTOR, FXD, 68,000 OHMS 5%, 1/2 W 745-1428-000	2A4R13 2A5R13	AR	B
49	RC20GF753J	2	RESISTOR, FXD, 75,000 OHMS 5%, 1/2 W 745-1431-000	2A4R13 2A5R13	AR	B
49	RC20GF823J	2	RESISTOR, FXD, 82,000 OHMS 5%, 1/2 W 745-1432-000	2A4R13 2A5R13	AR	B
49	RC20GF913J	2	RESISTOR, FXD, 91,000 OHMS 5%, 1/2 W 745-1434-000	2A4R13 2A5R13	AR	B
49	RC20GF104J	2	RESISTOR, FXD, 0.10 MEG 5%, 1/2 W 745-1435-000	2A4R13 2A5R13	AR	B
49	RC20GF114J	2	RESISTOR, FXD, 0.11 MEG 5%, 1/2 W 745-1438-000	2A4R13 2A5R13	AR	B
49	RC20GF124J	2	RESISTOR, FXD, 0.12 OHMS 5%, 1/2 W 745-1439-000	2A4R13 2A5R13	AR	B
49	RC20GF134J	2	RESISTOR, FXD, 0.13 MEG 5%, 1/2 W 745-1441-000	2A4R13 2A5R13	AR	B
49	RC20GF154J	2	RESISTOR, FXD, 0.15 MEG 5%, 1/2 W 745-1442-000	2A4R13 2A5R13	AR	B
49	RC20GF164J	2	RESISTOR, FXD, 0.16 MEG 5%, 1/2 W 745-1445-000	2A4R13 2A5R13	AR	B
49	RC20GF184J	2	RESISTOR, FXD, 0.18 MEG 5%, 1/2 W 745-1446-000	2A4R13 2A5R13	AR	B

FIG. - ITEM	PART NO.	INDENT.	NOMENCLATURE		UNITS PER ASSY.	USAGE CODE
5-7 49	RC20GF204J	2	RESISTOR, FXD, 0.20 MEG 5%, 1/2 W 745-1448-000	2A4R13 2A5R13	AR	B
49	RC20GF224J	2	RESISTOR, FXD, 0.22 MEG 5%, 1/2 W 745-1449-000	2A4R13 2A5R13	AR	B
49	RC20GF244J	2	RESISTOR, FXD, 0.24 MEG 5%, 1/2 W 745-1452-000	2A4R13 2A5R13	AR	B
49	RC20GF274J	2	RESISTOR, FXD, 0.27 MEG 5%, 1/2 W 745-1453-000	2A4R13 2A5R13	AR	B
49A	RC20GF302J	2	RESISTOR, FXD, 3000 OHMS 5%, 1/2 W 745-1371-000	2A4R13 2A4R14 2A5R13 2A5R14	AR	A
49A	RC20GF332J	2	RESISTOR, FXD, 3300 OHMS 5%, 1/2 W 745-1372-000	2A4R13 2A4R14 2A5R13 2A5R14	AR	A
49A	RC20GF362J	2	RESISTOR, FXD, 3600 OHMS 5%, 1/2 W 745-1375-000	2A4R13 2A4R14 2A5R13 2A5R14	AR	A
49A	RC20GF392J	2	RESISTOR, FXD, 3900 OHMS 5%, 1/2 W 745-1376-000	2A4R13 2A4R14 2A5R13 2A5R14	AR	A
49A	RC20GF432J	2	RESISTOR, FXD, 4300 OHMS 5%, 1/2 W 745-1378-000	2A4R13 2A4R14 2A5R13 2A5R14	AR	A
49A	RC20GF472J	2	RESISTOR, FXD, 4700 OHMS 5%, 1/2 W 745-1379-000	2A4R13 2A4R14 2A5R13 2A5R14	AR	A
49A	RC20GF512J	2	RESISTOR, FXD, 5100 OHMS 5%, 1/2 W 745-1382-000	2A4R13 2A4R14 2A5R13 2A5R14	AR	A
49A	RC20GF512J	2	RESISTOR, FXD, 5600 OHMS 5%, 1/2 W 745-1383-000	2A4R13 2A4R14 2A5R13 2A5R14	AR	A
49A	RC20GF622J	2	RESISTOR, FXD, 6200 OHMS 5%, 1/2 W 745-1385-000	2A4R13 2A4R14 2A5R13 2A5R14	AR	A
49A	RC20GF682J	2	RESISTOR, FXD, 6800 OHMS 5%, 1/2 W 745-1386-000	2A4R13 2A4R14 2A5R13 2A5R14	AR	A
49A	RC20GF752J	2	RESISTOR, FXD, 7500 OHMS 5%, 1/2 W 745-1389-000	2A4R13 2A4R14 2A5R13 2A5R14	AR	A
49A	RC20GF822J	2	RESISTOR, FXD, 8200 OHMS 5%, 1/2 W 745-1390-000	2A4R13 2A4R14 2A5R13 2A5R14	AR	A
49A	RC20GF912J	2	RESISTOR, FXD, 9100 OHMS 5%, 1/2 W 745-1392-000	2A4R13 2A4R14 2A5R13 2A5R14	AR	A

FIG. - ITEM	PART NO.	INDENT.	NOMENCLATURE		UNITS PER ASSY.	USAGE CODE
5-7	49A RC20GF103J	2	RESISTOR, FXD, 10,000 OHMS 5%, 1/2 W 745-1393-000	2A4R13 2A4R14 2A5R13 2A5R14	AR	A
	49A RC20GF113J	2	RESISTOR, FXD, 11,000 OHMS 5%, 1/2 W 745-1396-000	2A4R13 2A4R14 2A5R13 2A5R14	AR	A
	49A RC20GF123J	2	RESISTOR, FXD, 12,000 OHMS 5%, 1/2 W 745-1397-000	2A4R13 2A4R14 2A5R13 2A5R14	AR	A
	49A RC20GF133J	2	RESISTOR, FXD, 13,000 OHMS 5%, 1/2 W 745-1399-000	2A4R13 2A4R14 2A5R13 2A5R14	AR	A
	49A RC20GF153J	2	RESISTOR, FXD, 15,000 OHMS 5%, 1/2 W 745-1400-000	2A4R13 2A4R14 2A5R13 2A5R14	AR	A
	49A RC20GF163J	2	RESISTOR, FXD, 16,000 OHMS 5%, 1/2 W 745-1403-000	2A4R13 2A4R14 2A5R13 2A5R14	AR	A
	49A RC20GF183J	2	RESISTOR, FXD, 18,000 OHMS 5%, 1/2 W 745-1404-000	2A4R13 2A4R14 2A5R13 2A5R14	AR	A
	49A RC20GF203J	2	RESISTOR, FXD, 20,000 OHMS 5%, 1/2 W 745-1406-000	2A4R13 2A4R14 2A5R13 2A5R14	AR	A
	49A RC20GF223J	2	RESISTOR, FXD, 22,000 OHMS 5%, 1/2 W 745-1407-000	2A4R13 2A4R14 2A5R13 2A5R14	AR	A
	49A RC20GF243J	2	RESISTOR, FXD, 24,000 OHMS 5%, 1/2 W 745-1410-000	2A4R13 2A4R14 2A5R13 2A5R14	AR	A
	49A RC20GF273J	2	RESISTOR, FXD, 27,000 OHMS 5%, 1/2 W 745-1411-000	2A4R13 2A4R14 2A5R13 2A5R14	AR	A
	49A RC20GF303J	2	RESISTOR, FXD, 30,000 OHMS 5%, 1/2 W 745-1413-000	2A4R13 2A4R14 2A5R13 2A5R14	AR	A
	49A RC20GF333J	2	RESISTOR, FXD, 33,000 OHMS 5%, 1/2 W 745-1414-000	2A4R13 2A4R14 2A5R13 2A5R14	AR	A
	50 DA049-123B	2	CAPACITOR, FXD, 10,000 PF P100M20%, 500 VDCW 71590 913-3159-000 EFF MOD A	2A4C14 2A5C14	1	
	50A CK14AX103M	2	CAPACITOR, FXD, 10,000 PF 20%, 100 VDCW 913-3021-000	2A4C16 2A5C16	1	B
	50B 1N914	2	SEMICOND DEVICE 353-2906-000	2A4CR9 2A5CR9	1	B
	50C 1N914	2	SEMICOND DEVICE 353-2906-000	2A4CR10 2A5CR10	1	B

FIG. - ITEM	PART NO.	INDENT.	NOMENCLATURE		UNITS PER ASSY.	USAGE CODE
5-7 51	RC20GF100K	2	RESISTOR, FXD, 10 OHMS 10%, 1/2 W 745-1268-000 EFF MOD B SB5	2A4R25 2A5R25	1	
52	2N1156	2	TRANSISTOR 352-0036-000	2A4Q4 2A5Q4	1	
52A	2N1156	2	TRANSISTOR 352-0036-000	2A4Q5 2A5Q5	1	
52B	ST1050-34	2	TERMINAL 11707 306-0091-000 AP FOR 52 AND 52A		1	A
52B	RTMT12M	2	TERMINAL 91663 306-0976-000 AP FOR 52 AND 52A		1	B
52C	MS51959-13	2	SCREW, MACH., SST, FH, 4-40 X 1/4 342-0044-000 AP FOR 52 AND 52A		1	
53	2N1445	2	TRANSISTOR 352-0115-000 EFF MOD B SB5	2A4Q6 2A5Q6	1	
53A	MS35649-24	2	NUT, PLAIN, HEX., SST, 2-56 313-0037-000 AP		1	
53B	MS51957-1	2	SCREW, MACH., SST, PAN HD, 2-56 X 1/8 343-0122-000 AP		1	
54	RTMT12M	2	TERMINAL 91663 306-0976-000 EFF MOD E SB11		1	A
54	RTMT12M	2	TERMINAL 91663 306-0976-000		1	B
54A	MS35649-44	2	NUT, PLAIN, HEX., SST, 4-40 313-0043-000 AP		2	
54B	302-0007-000	2	WASHER, SHOULDERED, NM, 118 ID, 3/8 OD COML AP		2	
54C	310-0045-000	2	WASHER, FLAT, SST, 0.125 ID, 0.312 OD COML AP		2	
54D	MS51959-17	2	SCREW, MACH., SST, FH, 4-40 X 1/2 342-0048-000 AP		2	
55	4D4A12	2	TERMINAL 92825 306-0348-000		3	A
55	TF300	2	TERMINAL 98291 306-1018-000		3	B
55A	MS51959-2	2	SCREW, MACH., SST, FH, 2-56 X 3/16 342-0132-000 AP		3	
56	4D4A12	2	TERMINAL 92825 306-0348-000		2	A
56	TF300	2	TERMINAL 98291 306-1018-000		2	B
56A	P342-0141-000	2	SCREW, MACH., NI PL BRS, FH, 2-56 X 1/8 77250 342-0141-000 AP		2	
57	544-9060-002	2	RESISTOR, PRESSED	2A4R1	1	
57A	MS51959-13	2	SCREW, MACH., SST, FH, 4-40 X 1/4 342-0044-000 AP		1	
58	4D4A12	2	TERMINAL 92825 306-0348-000		6	A
58	TF300	2	TERMINAL 98291 306-1018-000		6	B
58A	P342-0141-000	2	SCREW, MACH., NI PL BRS, FH, 2-56 X 1/8 77250 342-0141-000 AP		6	
59	544-9565-002	2	PLATE, MTG SB5		1	
59A	544-9566-002	2	INSULATOR, MICA AP		1	
60	540-7132-002	2	BRACKET, MTG		2	
60A	MS51959-13	2	SCREW, MACH., SST, FH, 4-40 X 1/4 342-0044-000 AP		2	
60B	CL440-1C	3	NUT, PLAIN, CLINCH, CAD. PL STL, 4-40 46384 334-0062-000		2	
60C	540-7131-002	3	BRACKET, ANGLE		1	
61	543-5716-002	2	BRACKET, BOARD		1	
61A	MS51959-13	2	SCREW, MACH., SST, FH, 4-40 X 1/4 342-0044-000 AP		1	
61B	CL440-1C	3	NUT, PLAIN, CLINCH, CAD. PL STL, 4-40 46384 334-0062-000		2	
61C	543-5715-002	3	BRACKET, BOARD		1	
62	543-5770-002	2	FRAME, RIVETED		1	A
62	547-1397-002	2	FRAME, RIVETED		1	B

FIG. - ITEM	PART NO.	INDENT.	NOMENCLATURE		UNITS PER ASSY.	USAGE CODE
5-7 62A	MS51959-13	2	SCREW, MACH., SST, FH, 4-40 X 1/4 342-0044-000 AP		6	
62B	542-7768-002	3	BRACKET, RETAINING		2	
62C	543-5771-003	3	FRAME, CHASSIS		1	A
62C	546-7960-003	3	FRAME, CHASSIS		1	B
62D	MS20426AD2-3	3	RIVET, SOLID, AL, 0.062 DIA X 0.187 LG SHK 305-1352-000 AP FOR 62B AND 62C		4	
63	543-5719-002	2	BASE, DC		1	
5-7A	528-0531-001	1	ELECTRONIC CONTROL AMPLIFIER SEE FIG. 5-4-5	2A4 2A5	REF	
1	554-3974-001	2	PLATE, COVER		1	
	MS51959-12	2	SCREW, MACH., SST, FH, 4-40 X 3/16 342-0043-000 AP		2	
2	542-7695-003	2	PLATE, COVER		1	
	MS51959-12	2	SCREW, MACH., SST, FH, 4-40 X 3/16 342-0043-000 AP		1	
3	542-7682-002	2	SCREW, SHOULDERED		2	
4	526-6500-000	2	SATURABLE REACTOR, 7.1 TO 13.5 MA 95105 674-5009-000	2A4MR1 2A5MR1	1	
	P313-0045-000	2	NUT, PLAIN, HEX., SST, 6-32 77250 313-0045-000 AP		6	
	MS35338-136	2	WASHER, LOCK, SST, 0.141 ID, 0.253 OD 310-0282-000 AP		6	
	MS51959-27	2	SCREW, MACH., SST, FH, 6-32 X 5/16 342-0061-000 AP		6	
5	28950	2	TRANSFORMER 73386 674-1018-000	2A4T1 2A5T1	1	
	MS51959-13	2	SCREW, MACH., SST, FH, 4-40 X 1/4 342-0044-000 AP		2	
6	302-22	2	CHOPPER 81541 354-1022-000	2A4G1 2A5G1	1	
	MS35649-44	2	NUT, PLAIN, HEX., SST, 4-40 313-0043-000 AP		4	
	2104-04-01-2520N	2	TERMINAL 78189 304-0317-000 AP		1	
	MS35338-135	2	WASHER, LOCK, SST, 0.115 ID, 0.212 OD 310-0279-000 AP		4	
	MS51959-13	2	SCREW, MACH., SST, FH, 4-40 X 1/4 342-0044-000 AP		3	
	MS51959-14	2	SCREW, MACH., SST, FH, 4-40 X 5/16 342-0045-000 AP		1	
7	G3249	2	RESISTOR, VAR, 100 OHMS 20%, 1/2 W 01121 380-1662-000	2A4R17 2A5R17	1	
	P334-0266-000	2	NUT, PLAIN, HEX., NI PL BRS, 1/4-32 77250 334-0266-000 AP		1	
	1214-00-00-0543	2	WASHER, LOCK, CAD. PL STL, 0.267 ID, 0.478 OD 78189 373-1080-000 AP		1	

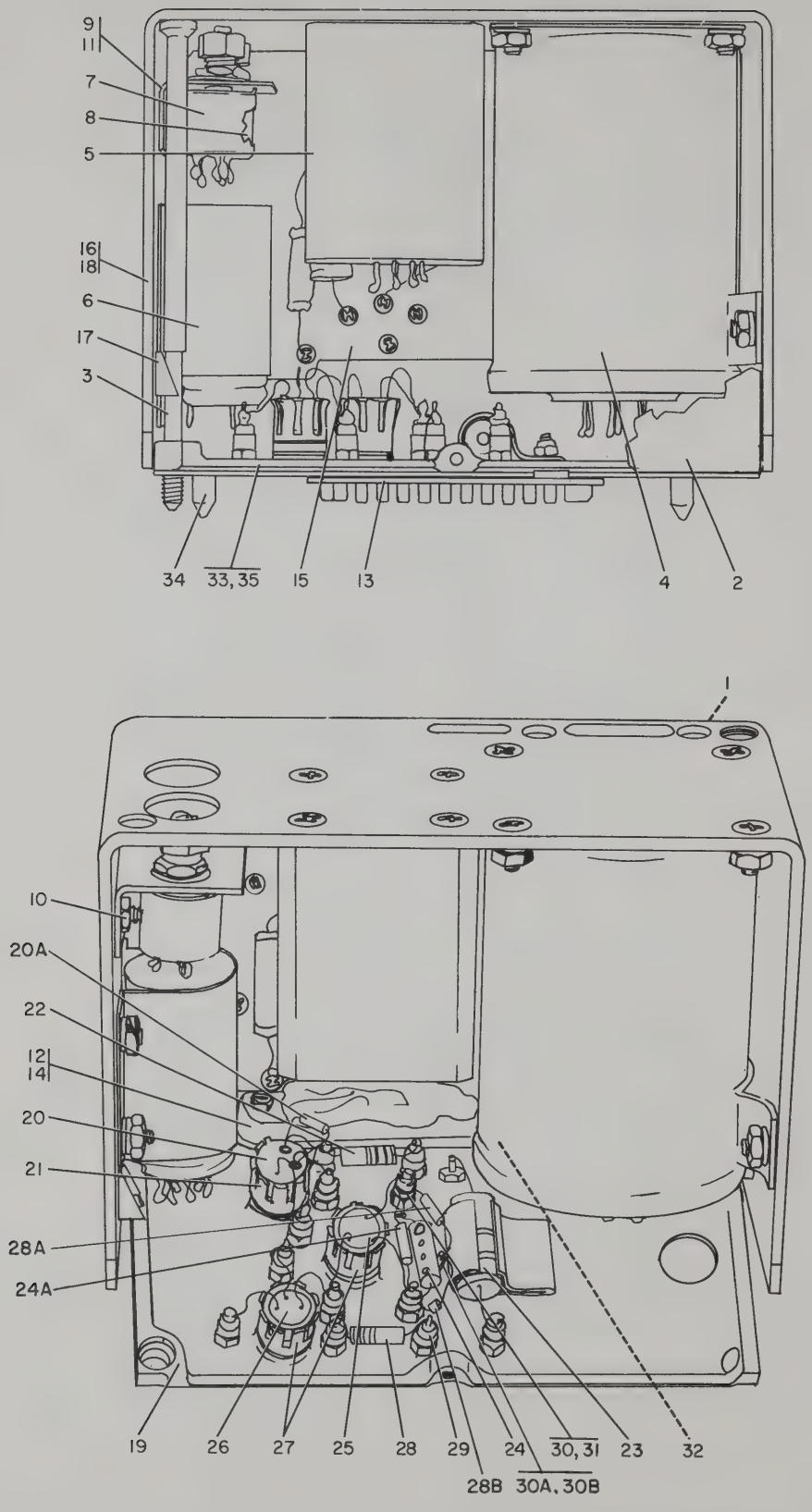
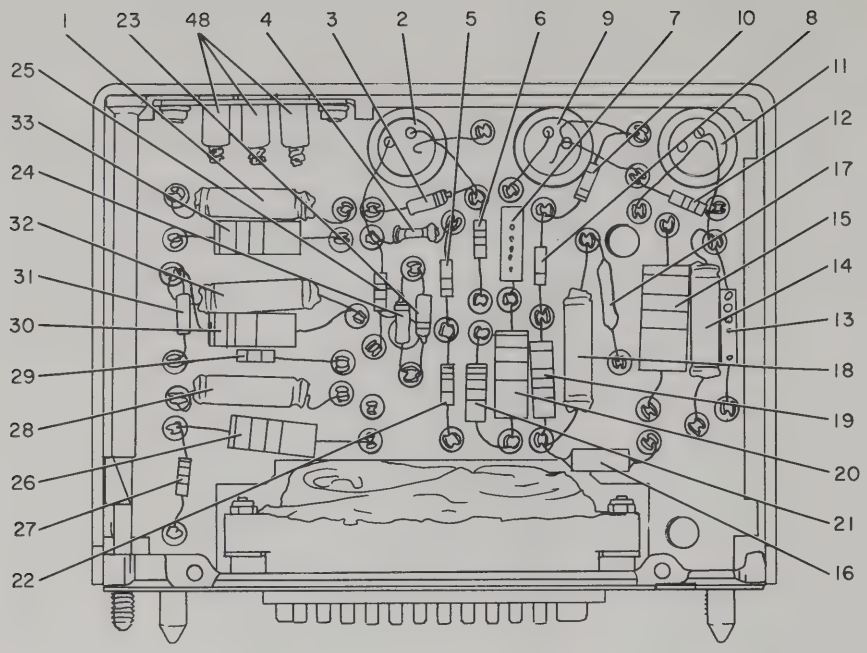


Figure 5-7A. Electronic Control Amplifier.

	FIG. - ITEM	PART NO.	INDENT.	NOMENCLATURE		UNITS PER ASSY.	USAGE CODE
	5-7A 8	G2666	2	RESISTOR, VAR, 10,000 OHMS 20%, 1/2 W 01121 380-1660-000	2A4R5 2A5R5	1	
		P334-0266-000	2	NUT, PLAIN, HEX., NI PL BRS, 1/4-32 77250 334-0266-000 AP		1	
		4012HOTTINNED	2	TERMINAL 77147 304-2800-000 AP		1	
		1214-00-00-0543	2	WASHER, LOCK, CAD. PL STL, 0.267 ID, 0.478 OD 78189 373-1080-000 AP		1	
	9	757-3561-001	2	HOLDER, RESISTOR		1	
		MS51959-13	2	SCREW, MACH., SST, FH, 4-40 X 1/4 342-0044-000 AP		4	
	10	CL440-1C	3	NUT, PLAIN, CLINCH, CAD. PL STL, 4-40 46384 334-0062-000		2	
	11	543-5717-002	3	BRACKET, RESISTOR		1	
	12	MD612S	2	CONNECTOR 95354 372-7486-010	2A4P1	1	
	13	554-3962-001	2	GASKET, ELECTRICAL CONN		1	
	14	541-5950-002	2	SPACER, SLV		2	
		68-1660-26	2	NUT, SELF-LKG, HEX., AL, 2-56 72962 333-0604-000 AP FOR 12 THRU 14		2	
R		310-6320-000	2	WASHER, FLAT, SST, 0.092 ID, 0.219 OD COML AP FOR 12 THRU 14		4	
		MS51959-8	2	SCREW, MACH., SST, FH, 2-56 X 5/8 342-0041-000 AP FOR 12 THRU 14		2	
	15	757-3559-001	2	AMPLIFIER SUBASSEMBLY, TERMINAL BOARD SEE FIG. 5-7B		1	
		MS51959-13	2	SCREW, MACH., SST, FH, 4-40 X 1/4 342-0044-000 AP		7	
	16	757-3562-001	2	FRAME, AMPL		1	
	17	542-7768-002	3	BRACKET, RETAINING		2	
		MS20426AD2-3	3	RIVET, SOLID, AL, 0.062 DIA X 0.187 LG SHK 305-1352-000 AP		4	
	18	554-3975-001	3	FRAME, CHASSIS		1	
	19	757-3557-001	2	AMPLIFIER SUBASSEMBLY, BASE		1	
		MS51959-13	2	SCREW, MACH., SST, FH, 4-40 X 1/4 342-0044-000 AP		4	
	20	2N1445	2	TRANSISTOR 352-0115-000	2A4Q6 2A5Q6	1	
R	20A	40C73A1	3	CAPACITOR, FXD, 1000 PF 20%, 500 VDCW 01939 913-3009-000	2A4C17 2A5C17	1	
R	21	TXB2P032-037-3B	2	HOLDER 98978 352-9884-000		1	
		P330-2250-000	2	SCREW, MACH., NYLON, SLOT. FIL H, 4-40 X 3/16 77250 330-2250-000 AP FOR 20 AND 21		1	
R		545-7544-003	2	WASHER EFF THRU MCN 2729 AP FOR 20 AND 21		1	
R		302-0385-000	3	INSULATOR, WASH. 81804 EFF MCN 2730 AP FOR 20 AND 21		1	
	22	RC20GF100K	3	RESISTOR, FXD, 10 OHMS 10%, 1/2 W 745-1268-000	2A4R25 2A5R25	1	
	23	HM4721	3	RESISTOR, FXD, 4700 OHMS 10%, 4 W 01121 745-9725-000	2A4R1 2A5R1	1	
		68-1660-40	3	NUT, SELF-LKG, HEX., AL, 4-40 72962 333-0605-000 AP		1	
		MS51959-14	3	SCREW, MACH., SST, FH, 4-40 X 5/16 342-0045-000 AP		1	
R	24	CK14AX103M	3	CAPACITOR, FXD, 10,000 PF 20%, 100 VDCW 913-3021-000	2A4C14 2A5C14	1	

	FIG. - ITEM	PART NO.	INDENT.	NOMENCLATURE		UNITS PER ASSY.	USAGE CODE
R	5-7A 24A	CK14AX103M	3	CAPACITOR, FXD, 10,000 PF 20%, 100 VDCW 913-3021-000	2A4C18 2A5C18	1	
	25	2N1893	3	TRANSISTOR 352-0364-000	2A4Q5 2A5Q5	1	
	26	2N1893	3	TRANSISTOR 352-0364-000	2A4Q4 2A5Q4	1	
	27	TXB2P032-0373	3	HOLDER 98978 352-9885-000		2	
		P330-2250-000	3	SCREW, MACH., NYLON, SLOT. FIL H, 4-40 X 3/16 77250 330-2250-000 AP FOR 25 THRU 27		2	
R		545-7544-003	3	WASHER EFF THRU MCN 2729 AP FOR 25 THRU 27		2	
R		302-0385-000	3	INSULATOR, WASH. 81804 EFF MCN 2730 AP FOR 25 THRU 27		2	
	28	RC07GF623J	3	RESISTOR, FXD, 62,000 OHMS 5%, 1/4 W 745-0813-000	2A4R13 2A5R13	AR	
	28	RC07GF683J	3	RESISTOR, FXD, 68,000 OHMS 5%, 1/4 W 745-0814-000	2A4R13 2A5R13	AR	
	28	RC07GF753J	3	RESISTOR, FXD, 75,000 OHMS 5%, 1/4 W 745-0816-000	2A4R13 2A5R13	AR	
	28	RC07GF823J	3	RESISTOR, FXD, 82,000 OHMS 5%, 1/4 W 745-0817-000	2A4R13 2A5R13	AR	
	28	RC07GF913J	3	RESISTOR, FXD, 91,000 OHMS 5%, 1/4 W 745-0819-000	2A4R13 2A5R13	AR	
	28	RC07GF104J	3	RESISTOR, FXD, 0.10 MEG 5%, 1/4 W 745-0820-000	2A4R13 2A5R13	AR	
	28	RC07GF114J	3	RESISTOR, FXD, 0.11 MEG 5%, 1/4 W 745-0822-000	2A4R13 2A5R13	AR	
	28	RC07GF124J	3	RESISTOR, FXD, 0.12 MEG 5%, 1/4 W 745-0823-000	2A4R13 2A5R13	AR	
	28	RC07GF134J	3	RESISTOR, FXD, 0.13 MEG 5%, 1/4 W 745-0825-000	2A4R13 2A5R13	AR	
	28	RC07GF154J	3	RESISTOR, FXD, 0.15 MEG 5%, 1/4 W 745-0826-000	2A4R13 2A5R13	AR	
	28	RC07GF164J	3	RESISTOR, FXD, 0.16 MEG 5%, 1/4 W 745-0828-000	2A4R13 2A5R13	AR	
	28	RC07GF184J	3	RESISTOR, FXD, 0.18 MEG 5%, 1/4 W 745-0829-000	2A4R13 2A5R13	AR	
	28	RC07GF204J	3	RESISTOR, FXD, 0.20 MEG 5%, 1/4 W 745-0831-000	2A4R13 2A5R13	AR	
	28	RC07GF224J	3	RESISTOR, FXD, 0.22 MEG 5%, 1/4 W 745-0832-000	2A4R13 2A5R13	AR	
	28	RC07GF244J	3	RESISTOR, FXD, 0.24 MEG 5%, 1/4 W 745-0834-000	2A4R13 2A5R13	AR	
	28	RC07GF274J	3	RESISTOR, FXD, 0.27 MEG 5%, 1/4 W 745-0835-000	2A4R13 2A5R13	AR	
	28	RC07GF304J	3	RESISTOR, FXD, 0.30 MEG 5%, 1/4 W 745-0837-000	2A4R13 2A5R13	AR	
	28	RC07GF334J	3	RESISTOR, FXD, 0.33 MEG 5%, 1/4 W 745-0838-000	2A4R13 2A5R13	AR	
R	28A	1N914	3	SEMICOND DEVICE 353-2906-000 EFF MCN 2730	2A4CR9 2A5CR9	1	
R	28B	1N914	3	SEMICOND DEVICE 353-2906-000 EFF MCN 2730	2A4CR10 2A5CR10	1	
	29	TF300	3	TERMINAL 98291 306-1018-000		12	
		MS51959-1	3	SCREW, MACH., SST, FH, 2-56 X 1/8 342-0131-000 AP		12	
	30	TF300	3	TERMINAL 98291 306-1018-000		1	

	FIG. - ITEM	PART NO.	INDENT.	NOMENCLATURE		UNITS PER ASSY.	USAGE CODE
R	5-7A 30A	TF300	3	TERMINAL 98291 306-1018-000 EFF MCN 2730		1	
R	30B	4040-2HOTTIN NED	3	TERMINAL 77147 304-0014-000 EFF MCN 2730		1	
R		MS51959-1	3	SCREW, MACH., SST, FH, 2-56 X 1/8 342-0131-000 AP		1	
R	31	4040-2HOTTIN NED	3	TERMINAL 77147 304-0014-000		1	
		MS51959-1	3	SCREW, MACH., SST, FH, 2-56 X 1/8 342-0131-000 AP		1	
R	32	4040-2HOTTIN NED	3	TERMINAL 77147 304-0014-000		1	
R		68-1660-26	3	NUT, SELF-LKG, HEX., AL, 2-56 72962 333-0604-000 AP		1	
R		310-0075-000	3	WASHER, LOCK, BRZ, 0.088 ID, 0.165 OD COML EFF MCN 2730 AP		1	
R		MS51959-12	3	SCREW, MACH., SST, FH, 4-40 X 3/16 342-0043-000 AP		1	
	33	757-3558-001	3	BASE, AMPL		1	
	34	540-7767-002	4	PIN, LOCATING		2	
	35	554-3971-001	4	BASE, AMPL		1	
	5-7B	757-3559-001	1	AMPLIFIER SUBASSEMBLY, TERMINAL BOARD SEE FIG. 5-7A-15 FOR NHA	2A4TB1 2A5TB1	REF	
	1	CL31CN0R5MP3	2	CAPACITOR, FXD, 0.5 UF 20%, 100 VDCW 184-7272-000	2A4C11 2A5C11	1	
	2	2N697	2	TRANSISTOR 352-0197-000	2A4Q3 2A5Q3	1	
	3	1N461	2	SEMICOND DEVICE 353-0200-000	2A4CR3 2A5CR3	1	
	4	997F14	2	RESISTOR, THRM, 10,000 OHMS 10%, 1/2 W 10646 714-1738-000	2A4RT1 2A5RT1	1	
	5	RC07GF272K	2	RESISTOR, FXD, 2700 OHMS 10%, 1/4 W 745-0764-000	2A4R12 2A5R12	1	
	6	RC07GF274K	2	RESISTOR, FXD, 0.27 MEG 10%, 1/4 W 745-0836-000	2A4R6 2A5R6	1	
R	7	CT10-103K	2	CAPACITOR, FXD, 10,000 PF 10%, 100 VDCW 90634 913-5661-120	2A4C7 2A5C7	1	
	8	RC07GF222K	2	RESISTOR, FXD, 2200 OHMS 10%, 1/4 W 745-0761-000	2A4R22 2A5R22	1	
	9	2N697	2	TRANSISTOR 352-0197-000	2A4Q2 2A5Q2	1	
	10	RC07GF102K	2	RESISTOR, FXD, 1000 OHMS 10%, 1/4 W 745-0749-000	2A4R4 2A5R4	1	
	11	2N697	2	TRANSISTOR 352-0197-000	2A4Q1 2A5Q1	1	
	12	RC07GF474K	2	RESISTOR, FXD, 0.47 MEG 10%, 1/4 W 745-0845-000	2A4R3 2A5R3	1	
	13	CK13AX472M	2	CAPACITOR, FXD, 4700 PF 20%, 100 VDCW 913-3020-000	2A4C16 2A5C16	1	
R	14	CL23CH2R5TN3	2	CAPACITOR, FXD, 2.5 UF P50M15%, 30 VDCW 184-7279-000 EFF THRU MCN 2729	2A4C4 2A5C4	1	



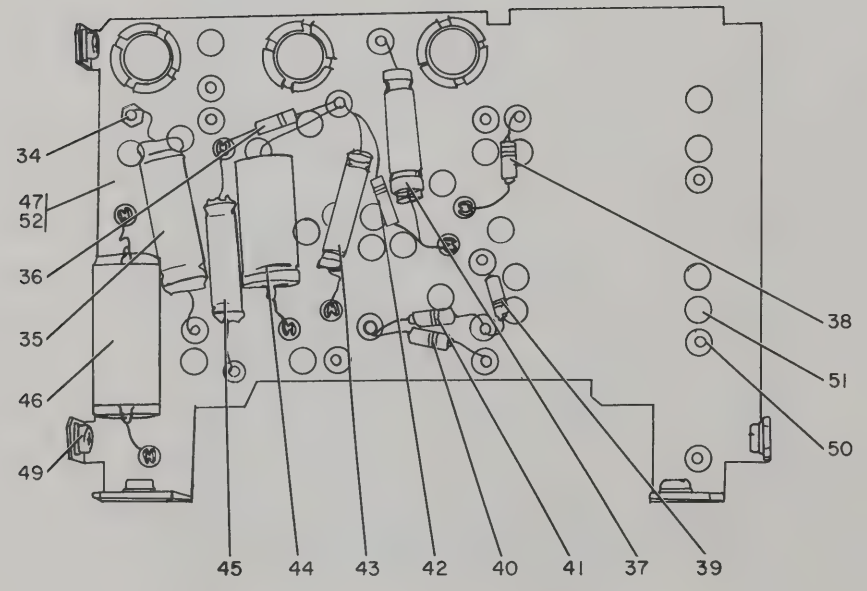


Figure 5-7B. Terminal Board Amplifier Subassembly.

	FIG. - ITEM	PART NO.	INDENT.	NOMENCLATURE		UNITS PER ASSY.	USAGE CODE
R	5-7B 14	150D224X0035 A2	2	CAPACITOR, FXD, 0.22 UF 20%, 35 VDCW 56289 184-7407-000 EFF MCN 2730	2A4C4 2A5C4	1	
	15	RC42GF102K	2	RESISTOR, FXD, 1000 OHMS 10%, 2 W 745-5652-000	2A4R18 2A5R18	1	
	16	WEE560	2	COIL, RF, 560 UH 72259 240-1193-000	2A4L1 2A5L1	1	
	17	RN60D1002F	2	RESISTOR, FXD, 10,000 OHMS 1%, 1/4 W 705-6644-000	2A4R2 2A5R2	1	
	18	CL23CH2R5TN3	2	CAPACITOR, FXD, 2.5 UF P50M15%, 30 VDCW 184-7279-000	2A4C13 2A5C13	1	
R	19	CT10-103K	2	CAPACITOR, FXD, 10,000 PF 10%, 100 VDCW 90634 913-5661-120	2A4C3 2A5C3	1	
	20	RC32GF223K	2	RESISTOR, FXD, 22,000 OHMS 10%, 1 W 745-3408-000	2A4R8 2A5R8	1	
R	21	RC20GF473K	2	RESISTOR, FXD, 47,000 OHMS 10%, 1/2 W 745-1422-000 EFF THRU MCN 2729	2A4R7 2A5R7	1	
R	21	RC20GF103K	2	RESISTOR, FXD, 10,000 OHMS 10%, 1/2 W 745-1394-000 EFF MCN 2730	2A4R7 2A5R7	1	
	22	RC07GF332K	2	RESISTOR, FXD, 3300 OHMS 10%, 1/4 W 745-0767-000	2A4R15 2A5R15	1	
	23	1N461	2	SEMICOND DEVICE 353-0200-000	2A4CR2 2A5CR2	1	
	24	1N461	2	SEMICOND DEVICE 353-0200-000	2A4CR1 2A5CR1	1	
	25	RC07GF153K	2	RESISTOR, FXD, 15,000 OHMS 10%, 1/4 W 745-0791-000	2A4R11 2A5R11	1	
	26	RC32GF472K	2	RESISTOR, FXD, 4700 OHMS 10%, 1 W 745-3380-000	2A4R20 2A5R20	1	
	27	RC07GF104K	2	RESISTOR, FXD, 0.10 MEG 10%, 1/4 W 745-0821-000	2A4R21 2A5R21	1	
	28	CL31CN0R5MP3	2	CAPACITOR, FXD, 0.5 UF 20%, 100 VDCW 184-7272-000	2A4C12 2A5C12	1	
	29	RC07GF392K	2	RESISTOR, FXD, 3900 OHMS 10%, 1/4 W 745-0770-000	2A4R23 2A5R23	1	
	30	RC32GF682K	2	RESISTOR, FXD, 6800 OHMS 10%, 1 W 745-3387-000	2A4R16 2A5R16	1	
	31	CL21CJ030TP3	2	CAPACITOR, FXD, 3 UF P50M15%, 50 VDCW 184-7287-000	2A4C10 2A5C10	1	
	32	1N270	2	SEMICOND DEVICE 353-2018-000	2A4CR8 2A5CR8	1	
	33	RC32GF472K	2	RESISTOR, FXD, 4700 OHMS 10%, 1 W 745-3380-000	2A4R19 2A5R19	1	
	34	AB397-1A	2	TERMINAL 12615 306-1286-000		1	
		P334-0278-000	2	NUT, PLAIN, HEX., NI PL STL, 2-56 77250 334-0278-000 AP		1	
		310-0075-000	2	WASHER, LOCK, BRZ, 0.088 ID, 0.165 OD COML AP		1	
	35	CL21CK080TP3	2	CAPACITOR, FXD, 8 UF P50M15%, 60 VDCW 184-7280-000	2A4C9 2A5C9	1	
	36	RC07GF392K	2	RESISTOR, FXD, 3900 OHMS 10%, 1/4 W 745-0770-000	2A4R10 2A5R10	1	
	37	CL33CH0R8MN3	2	CAPACITOR, FXD, 0.8 UF 20%, 30 VDCW 184-7285-000	2A4C15 2A5C15	1	
	38	1N647	2	SEMICOND DEVICE 353-2596-000	2A4CR6 2A5CR6	1	
	39	1N647	2	SEMICOND DEVICE 353-2596-000	2A4CR4 2A5CR4	1	

	FIG. - ITEM		PART NO.	INDENT.	NOMENCLATURE		UNITS PER ASSY.	USAGE CODE
	5-7B	40	1N647	2	SEMICOND DEVICE 353-2596-000	2A4CR7 2A5CR7	1	
		41	1N647	2	SEMICOND DEVICE 353-2596-000	2A4CR5 2A5CR5	1	
R		42	RC07GF183K	2	RESISTOR, FXD, 18,000 OHMS 10%, 1/4 W 745-0794-000	2A4R26 2A5R26	1	
		43	CL21CH4R5TP3	2	CAPACITOR, FXD, 4.5 UF P50M15%, 30 VDCW 184-7276-000	2A4C5 2A5C5	1	
R		44	150D476X0035 S2	2	CAPACITOR, FXD, 47 UF 20%, 35 VDCW 56289 184-7411-000 EFF THRU MCN 2729	2A4C6 2A5C6	1	
R		44	1N965B	2	SEMICOND DEVICE, ZENER DIO, 15 V 5% 353-3176-000 EFF MCN 2730	2A4CR11 2A5CR11	1	
		45	CL23CH2R5TN3	2	CAPACITOR, FXD, 2.5 UF P50M15%, 30 VDCW 184-7279-000	2A4C8 2A5C8	1	
		46	196P68392S4	2	CAPACITOR, FXD, 0.068 UF 10%, 200 VDCW 56289 931-5000-000	2A4C2 2A5C2	1	
		47	757-3560-001	2	TERMINAL BOARD		1	
		48	SKT41WHT	3	JACK 98291 360-0266-000	2A4J1- 2A4J3 2A5J1- 2A5J3	3	
		49	F22NCFMA1-40	3	NUT, SELF-LKG, CLINCH, CAD. PL STL, 4-40 72962 333-0839-000		7	
		50	SL276-198DWHT	3	TERMINAL 12615 306-1321-000		19	
		51	DP439-433WHT	3	TERMINAL 21242 306-1521-000		33	
		52	554-3972-001	3	TERMINAL BOARD, SERVO		1	
	5-8		522-1002-004	1	ISOLATION MULTICOUPLER SEE FIG. 5-4-4 FOR NHA	2A1 2A2 2A3	REF	
		1	544-9201-002	2	SCREW, CAPTIVE		1	
		2	542-7681-002	2	SCREW, CAPTIVE		1	
R		3	543-6134-003	2	COVER, REAR		1	
		4	P343-0286-00 0	2	SCREW, MACH., NI PL BRS, PAN HD, 4-40 X 5/16 77250 343-0286-000 AP		1	
R		5	543-6133-003	2	COVER, FRONT		1	
		6	P343-0286-00 0	2	SCREW, MACH., NI PL BRS, PAN HD, 4-40 X 5/16 77250 343-0286-000 AP		1	
		7	541-6554-005	2	SHIELD ASSY, ELECTRON TUBE	2A1E1 2A2E1 2A3E1	1	
		8	5687WA	2	ELECTRON TUBE 89185 253-0016-000 EFF THRU MCN 3164	2A1V1 2A2V1 2A3V1	1	
R		8	12DJ8	2	ELECTRON TUBE 82219 255-1000-010 EFF MCN 3165 THRU 4661 SB13	2A1V1 2A2V1 2A3V1	1	
R		8	6DJ8-6DJ8GB	2	ELECTRON TUBE 82219 255-1000-090 EFF MCN 4662 SB16	2A1V1 2A2V1 2A3V1	1	

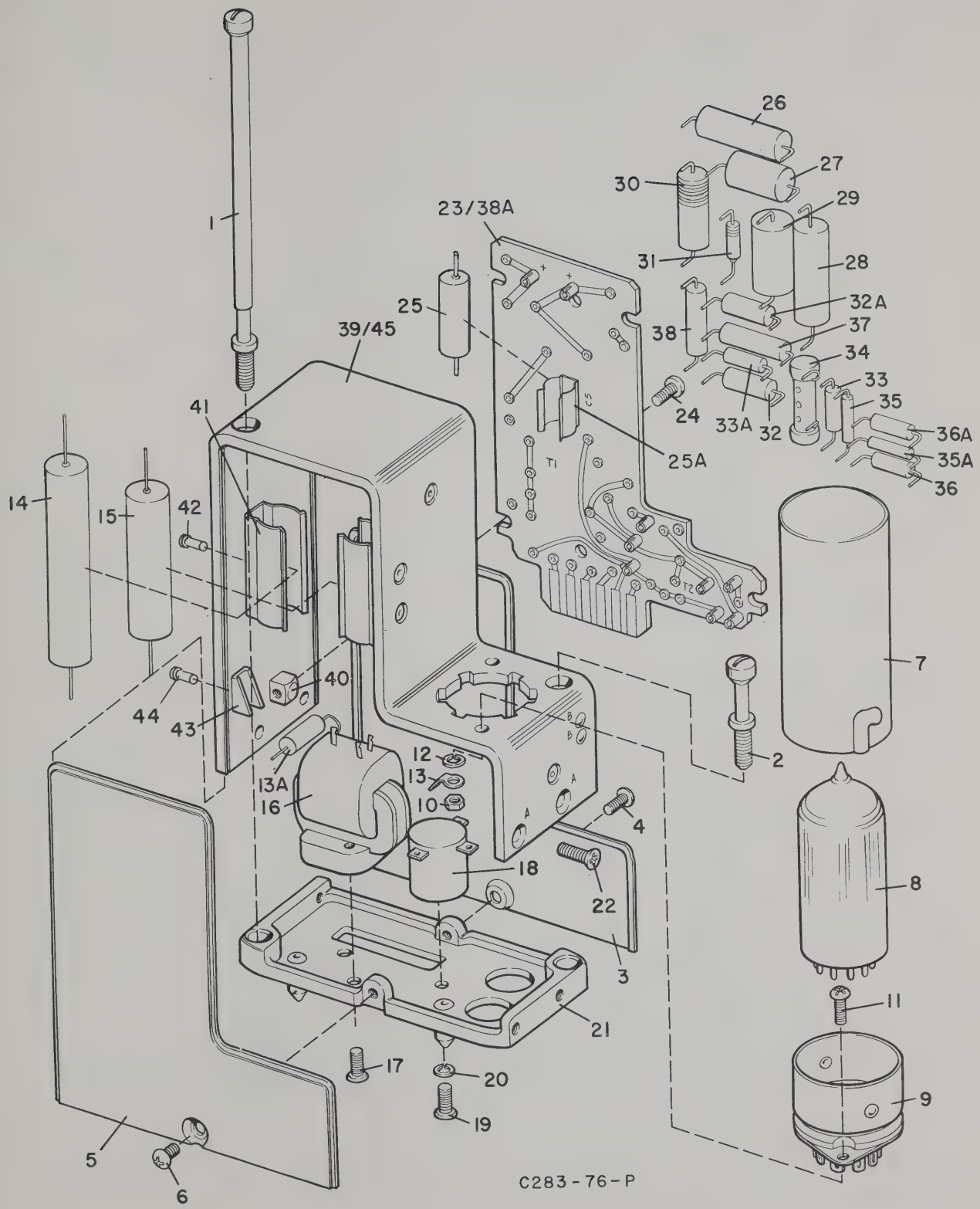


Figure 5-8. Isolation Multicoupler.

	FIG. - ITEM	PART NO.	INDENT.	NOMENCLATURE		UNITS PER ASSY.	USAGE CODE
	5-8 9	7490-0189	2	SOCKET 80368 220-1293-000	2A1XV1 2A2XV1 2A3XV1	1	
	10	P313-0051-00 0	2	NUT, PLAIN, HEX., NI PL BRS, 4-40 77250 313-0051-000 AP		2	
	11	P343-0286-00 0	2	SCREW, MACH., NI PL BRS, PAN HD, 4-40 X 5/16 77250 343-0286-000 AP		2	
	12	310-0076-000	2	WASHER, LOCK, BRZ, 0.115 ID, 0.212 OD COML AP		2	
R	13	2104-04-01-2 520N	2	TERMINAL 78189 304-0317-000 SB13 AP		2	
R	13A	RW69V18U	2	RESISTOR, FXD, 18 OHMS 5%, 3 W 747-5325-000 SB16	2A1R11 2A2R11 2A3R11	1	
	14	CL24BQ250SP3	2	CAPACITOR, FXD, 25 UF P30M15%, 150 VDCW 184-7021-000	2A1C4 2A2C4 2A3C4	1	
	15	CL24BQ130SP3	2	CAPACITOR, FXD, 13 UF P30M15%, 150 VDCW 184-7035-000	2A1C5 2A2C5 2A3C5	1	
R	16	27680	2	TRANSFORMER 97965 674-1247-000 EFF THRU MCN 4661	2A1T1 2A2T1 2A3T1	1	
R	16	38822	2	TRANSFORMER 73386 674-1265-010 EFF MCN 4662 SB16	2A1T1 2A2T1 2A3T1	1	
	17	P342-0151-00 0	2	SCREW, MACH., NI PL BRS, FH, 4-40 X 3/16 77250 342-0151-000 AP		2	
	18	543-7318-002	2	TRANSFORMER, RF	2A1T2 2A2T2 2A3T2	1	
	19	P342-0151-00 0	2	SCREW, MACH., NI PL BRS, FH, 4-40 X 3/16 77250 342-0151-000 AP		1	
	20	310-0278-000	2	WASHER, LOCK, SST, 0.115 ID, 0.202 OD COML AP		1	
R	21	543-6126-002	2	FRAME, BLOWER CANVAS		1	
	22	P342-0152-00 0	2	SCREW, MACH., NI PL BRS, FH, 4-40 X 1/4 77250 342-0152-000 AP		4	
	23	543-6141-005	2	BOARD ASSY, RCVR COUPLER		1	
	24	P347-0090-00 0	2	SCREW, MACH., NI PL BRS, FIL H, 4-40 X 1/4 77250 347-0090-000 AP		4	
	25	196P47304S4	3	CAPACITOR, FXD, 0.047 UF 20%, 400 VDCW 56289 931-4548-000	2A1C3 2A2C3 2A3C3	1	
R	25A	100-200-16-8	3	CLIP 99378 139-0759-000		1	
	26	535-301	3	RESISTOR, FXD, 300 OHMS 5%, 3 W 91637 747-9321-000	2A1R3 2A2R3 2A3R3	1	
	27	BS217	3	COIL, RF, 220 MH 99800 240-0198-000	2A1L4 2A2L4 2A3L4	1	
R	* 27	RC32GF272K	3	RESISTOR, FXD, 2700 OHMS 10%, 1 W 745-3370-000 SB15	2A1R10 2A2R10 2A3R10	1	

* OPTIONAL PER SB15

	FIG. - ITEM		PART NO.	INDENT.	NOMENCLATURE		UNITS PER ASSY.	USAGE CODE
	5-8	28	196P68302S4	3	CAPACITOR, FXD, 0.068 UF 20%, 200 VDCW 56289 931-4506-000	2A1C8 2A2C8 2A3C8	1	
		29	DM0073	3	COIL, RF, 500 MH 99800 240-0073-000	2A1L3 2A2L3 2A3L3	1	
R		* 29	RC32GF272K	3	RESISTOR, FXD, 2700 OHMS 10%, 1 W 745-3370-000 SB15	2A1R9 2A2R9 2A3R9	1	
		30	RS2C40R00J	3	RESISTOR, FXD, 40 OHMS 5%, 3 W 91637 747-5102-000 EFF THRU MCN 2999	2A1R2 2A2R2 2A3R2	1	
		30	RW69V221	3	RESISTOR, FXD, 220 OHMS 5%, 3 W 747-5347-000 EFF MCN 3000 SB13	2A1R2 2A2R2 2A3R2	1	
		31	1N647	3	SEMICOND DEVICE 353-2596-000	2A1CR1 2A2CR1 2A3CR1	1	
R		32	LT4K036	3	COIL, RF, 1.50 UH 240-0063-000	2A1L1 2A2L1 2A3L1	1	
R		32A	LT4K036	3	COIL, RF, 1.50 UH 240-0063-000	2A1L2 2A2L2 2A3L2	1	
R		33	RC20GF104K	3	RESISTOR, FXD, 0.10 MEG 10%, 1/2 W 745-1436-000	2A1R4 2A2R4 2A3R4	1	
R		33A	RC20GF104K	3	RESISTOR, FXD, 0.10 MEG 10%, 1/2 W 745-1436-000	2A1R8 2A2R8 2A3R8	1	
		34	HTS17-3000Z	3	CAPACITOR, FXD, 3000 PF P100M20%, 350 VDCW 00656 913-3339-000	2A1C7 2A2C7 2A3C7	1	
		35	CK14AX103M	3	CAPACITOR, FXD, 10,000 PF 20%, 100 VDCW 913-3021-000	2A1C6 2A2C6 2A3C6	1	
R		* 35	150D154X0035 A2	3	CAPACITOR, FXD, 0.15 UF 20%, 35 VDCW 56289 184-7418-000 SB15	2A1C6 2A2C6 2A3C6	1	
		35A	CK14AX103M	3	CAPACITOR, FXD, 10,000 PF 20%, 100 VDCW 913-3021-000 EFF THRU MCN 2999 ONLY SB13	2A1C9 2A2C9 2A3C9	1	
R		* 35A	150D154X0035 A2	3	CAPACITOR, FXD, 0.15 UF 20%, 35 VDCW 56289 184-7418-000 SB15	2A1C9 2A2C9 2A3C9	1	
R		36	RC20GF560K	3	RESISTOR, FXD, 56 OHMS 10%, 1/2 W 745-1300-000 EFF THRU MCN 2999	2A1R5 2A2R5 2A3R5	1	
R		36	RC20GF151K	3	RESISTOR, FXD, 150 OHMS 10%, 1/2 W 745-1317-000 EFF MCN 3000 SB13	2A1R5 2A2R5 2A3R5	1	
R		36A	RC20GF560K	3	RESISTOR, FXD, 56 OHMS 10%, 1/2 W 745-1300-000 EFF THRU MCN 2999	2A1R6 2A2R6 2A3R6	1	
R		36A	RC20GF151K	3	RESISTOR, FXD, 150 OHMS 10%, 1/2 W 745-1317-000 EFF MCN 3000 SB13	2A1R6 2A2R6 2A3R6	1	

* OPTIONAL PER SB15

FIG. - ITEM	PART NO.	INDENT.	NOMENCLATURE		UNITS PER ASSY.	USAGE CODE
5-8 37	RN65D2610F	3	RESISTOR, FXD, 261 OHMS 1%, 1/2 W 705-7068-000	2A1R7 2A2R7 2A3R7	1	
38	RN65D3830F	3	RESISTOR, FXD, 383 OHMS 1%, 1/2 W 705-7076-000	2A1R1 2A2R1 2A3R1	1	
R 38A	543-6140-005	3	BOARD ASSY		1	
39	543-6124-002	2	FRAME, CHASSIS		1	
40	504-7698-002	3	FASTENER, ANGLE		4	
41	100-200-7-0	3	CLIP 99378 139-0747-000		2	
42	R4008X1-8CHR OMATEDP	3	RIVET, TUBULAR, AL, 0.089 DIA X 1/8 LG SHK 12014 305-0170-000 AP		4	
43	542-7768-002	3	BRACKET, RETAINING		2	
44	MS20426AD2-3	3	RIVET, SOLID, AL, 0.062 DIA X 0.187 LG SHK 305-1352-000 AP		4	
45	543-6125-002	3	FRAME, CHASSIS		1	
5-9	522-1076-004		349N-1 MOUNTING SEE FIG. 5-1-4 FOR NHA		REF	
1	544-9798-003	2	PLATE, IDENT		1	
	68-1660-26	2	NUT, SELF-LKG, HEX., AL, 2-56 72962 333-0604-000 AP		2	
	MS51957-2	2	SCREW, MACH., SST, PAN HD, 2-56 X 3/16 343-0123-000 AP		2	
2	541-3616-002	2	PIN, LOCATING		2	
	MS16633-1015	2	RING 340-0089-000 AP		2	
	541-3617-002	2	SPRING, HELICAL AP		2	
3	88-0749-02-704	2	LEAD 81860 200-0782-000		2	
	68-1660-40	2	NUT, SELF-LKG, HEX., AL, 4-40 72962 333-0605-000 AP		4	
	310-0045-000	2	WASHER, FLAT, SST, 0.125 ID, 0.312 OD COML AP		4	
	MS51959-13	2	SCREW, MACH., SST, FH, 4-40 X 1/4 342-0044-000 AP		4	
4	P346-6016-000	2	SCREW, ASSY, SST, 6-32 X 3/8 77250 346-6016-000		2	
5	310-6360-000	2	WASHER, FLAT, SST, 0.147 ID, 0.375 OD COML		2	
6	MS51959-28	2	SCREW, MACH., SST, FH, 6-32 X 3/8 342-0062-000		2	
7	MS51959-27	2	SCREW, MACH., SST, FH, 6-32 X 5/16 342-0061-000		1	
8	543-7577-003	2	TRAY, SHOCKMOUNT		1	
9	542-3048-003	3	BRACKET, SHAFT		1	
10	541-3620-002	3	BEARING, SLV		2	
11	541-6510-002	3	BOLT ASSY, CLAMP		2	
12	541-6506-002	4	BRACKET, BOLT ASSY		1	
	338-2020-000	4	PIN, COTTER, SST, 3/64 DIA X 1/2 LG COML AP		1	
	541-6507-002	4	PIN, STR AP		1	
13	541-6509-002	4	BOLT SUBASSEMBLY, CLAMP		1	
14	541-6502-002	5	SHAFT, SHLD		1	
15	541-6503-002	5	COLLAR, BOLT ASSY		1	

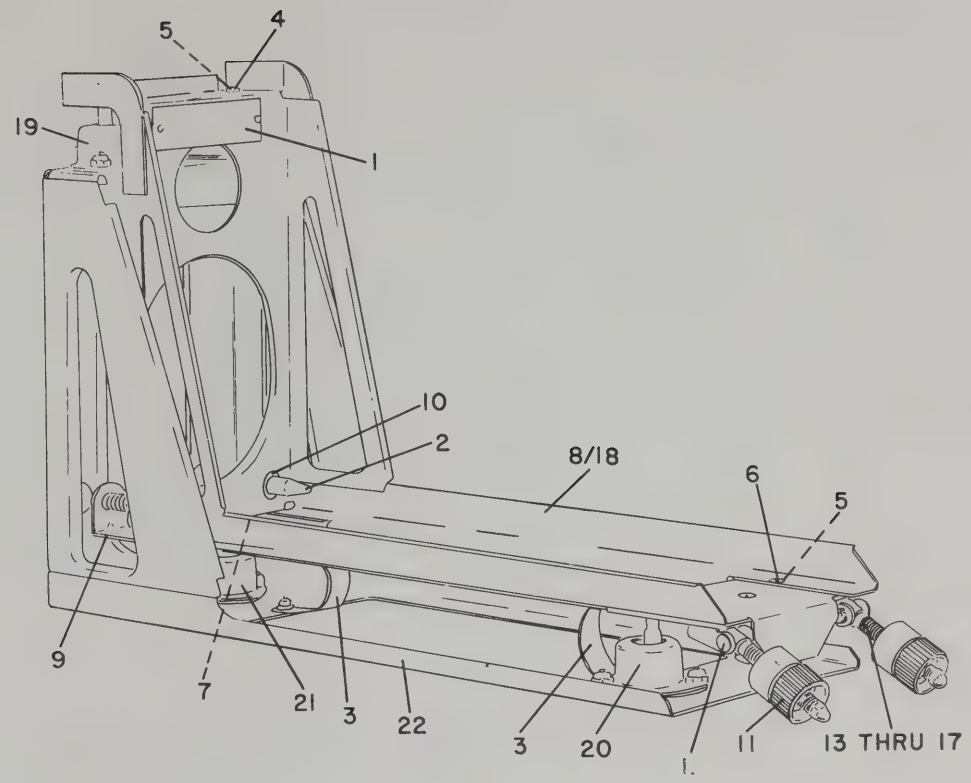


Figure 5-9. 349N-1 Mounting.

FIG. - ITEM	PART NO.	INDENT.	NOMENCLATURE	UNITS PER ASSY.	USAGE CODE
5-9 16	541-6508-002	5	THUMBNUT ASSY	1	
17	334-0043-000	5	NUT, PLAIN, CAP, NI PL BRS, 4-40 COML	1	
18	545-6165-005	3	TRAY, SHOCKMOUNT	1	
19	J6677-3	2	MOUNT 76005 200-0992-000	2	
	68NM62	2	NUT, SELF-LKG, HEX., AL, 6-32 72962 333-0368-000 AP	4	
	MS51957-28	2	SCREW, MACH., SST, PAN HD, 6-32 X 3/8 343-0169-000 AP	4	
20	J6677-8	2	MOUNT 76005 200-1076-000	2	
	68NM62	2	NUT, SELF-LKG, HEX., AL, 6-32 72962 333-0368-000 AP	4	
	MS51957-28	2	SCREW, MACH., SST, PAN HD, 6-32 X 3/8 343-0169-000 AP	4	
21	J6677-2	2	MOUNT 76005 200-0991-000	1	
	68NM62	2	NUT, SELF-LKG, HEX., AL, 6-32 72962 333-0368-000 AP	2	
	MS51957-28	2	SCREW, MACH., SST, PAN HD, 6-32 X 3/8 343-0169-000 AP	2	
	MS51959-27	2	SCREW, MACH., SST, FH, 6-32 X 5/16 342-0061-000 AP	1	
22	542-3051-005	2	BASE, PLATE	1	

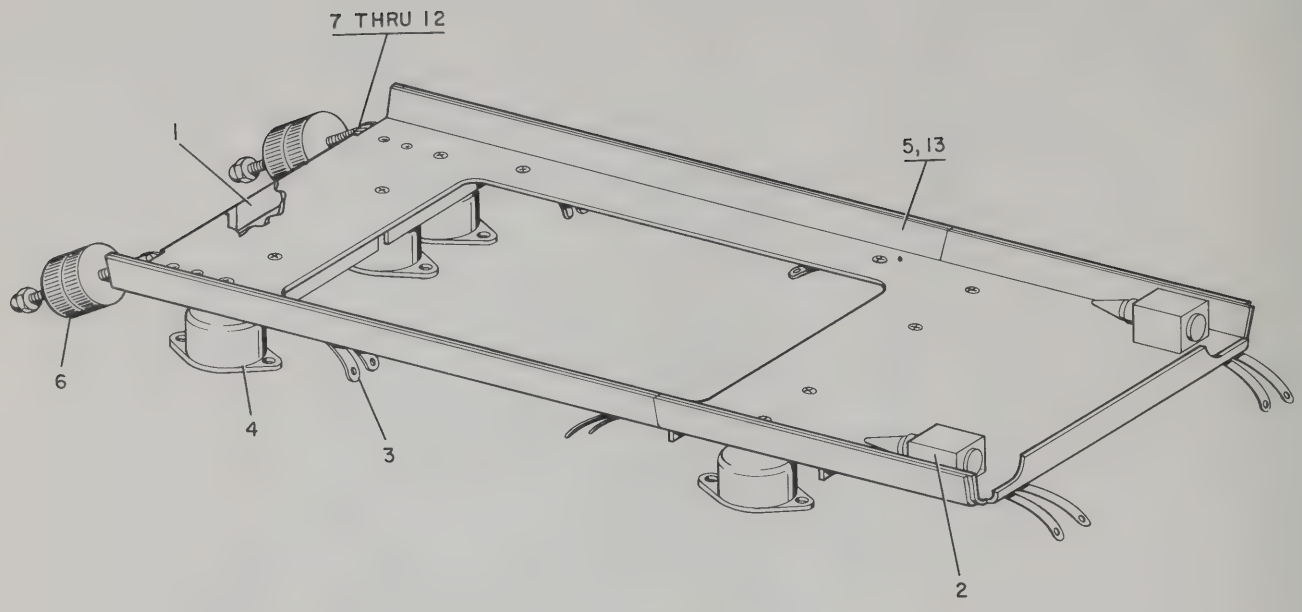


Figure 5-10. 349G-3 Shockmount.

FIG. - ITEM	PART NO.	INDENT.	NOMENCLATURE	UNITS PER ASSY.	USAGE CODE
5-10	522-0999-002	1	349G-3 MOUNT SEE FIG. 5-1-2 FOR NHA	REF	
1	280-2389-000	2	PLATE, IDENT 12998	1	
	MS51957-1	2	SCREW, MACH., SST, PAN HD, 2-56 X 1/8 343-0122-000 AP	2	
2	3098-005-000	2	RETAINER 81860 200-0789-000	2	
	MS35338-137	2	WASHER, LOCK, SST, 0.168 ID, 0.296 OD 310-0072-000 AP	8	
	MS51957-41	2	SCREW, MACH., SST, PAN HD, 8-32 X 1/4 343-0185-000 AP	8	
	544-0139-002	2	STRAP, GROUNDING AP	4	
3	544-0139-002	2	STRAP, GROUNDIND	8	
	P313-0051-000	2	NUT, PLAIN, HEX., NI PL BRS, 4-40 77250 313-0051-000 AP	4	
	1804-00	2	WASHER, LOCK, CAD. PL BRZ, 0.123 ID, 0.255 OD 78189 373-7010-000 AP	4	
R	P342-0153-000	2	SCREW, MACH., NI PL BRS, FH, 4-40 X 5/16 77250 342-0153-000 AP	4	

FIG. - ITEM		PART NO.	INDENT.	NOMENCLATURE		UNITS PER ASSY.	USAGE CODE
5-10	4	B22BC3-0	2	MOUNT 81860 200-0974-000		8	
		MS51959-43	2	SCREW, MACH., SST, FH, 8-32 X 3/8 342-0078-000 AP		8	
	5	544-0140-003	2	MOUNT		1	
	6	541-6510-002	3	BOLT ASSY, CLAMP		2	
		MS20426AD4-4	3	RIVET, SOLID, AL, 1/8 DIA X 0.250 LG SHK 305-1373-000 AP		4	
	7	541-6506-002	4	BRACKET, BOLT ASSY		1	
		338-2020-000	4	PIN, COTTER, SST, 3/64 DIA X 1/2 LG COML AP		1	
		541-6507-002	4	PIN, STR AP		1	
	8	541-6509-002	4	BOLT SUBASSEMBLY, CLAMP		1	
	9	541-6502-002	5	SHAFT, SHOULDERED		1	
	10	541-6503-002	5	COLLAR, BOLT ASSY		1	
	11	541-6508-002	5	THUMBNUT ASSY		1	
	12	334-0043-000	5	NUT, PLAIN, CAP, NI PL BRS, 4-40 COML		1	
	13	544-0141-005	3	MOUNT		1	
5-11		522-0998-005	1	180R-6 ANTENNA COUPLER SEE FIG. 5-1-1 FOR NHA		REF	
	1	280-2396-000	2	PLATE, IDENT 12998		1	
		MS51957-1	2	SCREW, MACH., SST, PAN HD, 2-56 X 1/8 343-0122-000 AP		4	
		310-0070-000	2	WASHER, LOCK, SST, 0.097 ID, 0.165 OD COML AP		4	
	2	NO NUMBER	2	CASE ASSEMBLY SEE FIG. 5-12		1	
		P347-0054-00 0	2	SCREW, MACH., SST, FIL H, 8-32 X 5/8 77250 347-0054-000 AP		12	
	3	544-0138-005	2	LOADING DISCRIMINATOR SEE FIG. 5-3	1A1	1	
	4	280-0450-000	2	PLATE, IDENT 74048		1	
	5	926H4	2	RETAINER 07387 139-0647-000		1	
		P343-0285-00 0	2	SCREW, MACH., NI PL BRS, PAN HD, 4-40 X 1/4 77250 343-0285-000 AP		1	
	6	544-0133-004	2	COVER ASSY, FRONT SEE FIG. 5-13		1	
		P313-0054-00 0	2	NUT, PLAIN, HEX., NI PL BRS, 8-32 77250 313-0054-000 AP		2	
		310-0397-000	2	WASHER, LOCK, BRZ, 0.168 ID, 0.280 OD COML AP		1	
		P312-3060-00 0	2	STUD, CONTINUOUS THD, CAD. PL BRS, 8-32 X 7/8 77250 312-3060-000 AP		1	
		P343-0310-00 0	2	SCREW, MACH., NI PL BRS, PAN HD, 8-32 X 7/16 77250 343-0310-000 AP		3	
		MS51959-44	2	SCREW, MACH., SST, FH, 8-32 X 7/16 342-0079-000 AP		2	
	7	NE2	2	LAMP 08805 262-0025-000	1RT1	1	
	8	HP4N	2	CLAMP 09922 150-1541-000		1	
		P343-0285-00 0	2	SCREW, MACH., NI PL BRS, PAN HD, 4-40 X 1/4 77250 343-0285-000 AP		1	
		310-0054-000	2	WASHER, FLAT, NI PL BRS, 0.125 ID, 0.312 OD COML AP		1	

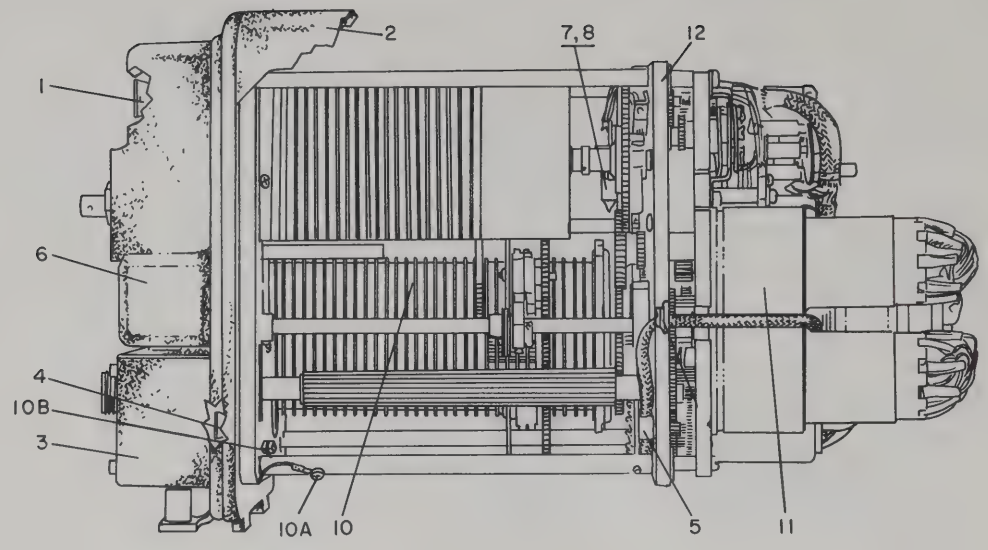


Figure 5-11. 180R-6 Antenna Coupler.

FIG. - ITEM	PART NO.	INDENT.	NOMENCLATURE	UNITS PER ASSY.	USAGE CODE
5-11 9		1	DELETED		
10	544-2667-002	2	COLLAR	1	
	4-48X1-8 6SP LINEOVPT18-8 SST	2	SETSCREW, SST, 4-48 X 1/8 08664 335-0019-000 AP	3	
10A	1024-6HOTTIN NED	2	TERMINAL 77147 304-0140-000	1	
	P343-0285-00 0	2	SCREW, MACH., NI PL BRS, PAN HD, 4-40 X 1/4 77250 343-0285-000 AP	1	
	310-0396-000	2	WASHER, LOCK, BRZ, 0.115 ID, 0.202 OD COML AP	1	
10B	1011HOTTINNE D	2	TERMINAL 77147 304-0114-000	1	
	P313-0054-00 0	2	NUT, PLAIN, HEX., NI PL BRS, 8-32 77250 313-0054-000 AP	2	
	310-0397-000	2	WASHER, LOCK, BRZ, 0.168 ID, 0.280 OD COML AP	1	
	P312-3060-00 0	2	STUD, CONTINUOUS THD, CAD. PL BRS, 8-32 X 7/8 77250 312-3060-000 AP	1	
11	NO NUMBER	2	ANTENNA COUPLER SUBASSEMBLY SEE FIG. 5-14	1	
	MS51959-46	2	SCREW, MACH., SST, FH, 8-32 X 5/8 342-0081-000 AP	2	
	500-1126-003	2	WASHER, FLAT AP	2	
12	544-0134-005	2	GEAR PLATE ASSY SEE FIG. 5-15	1	

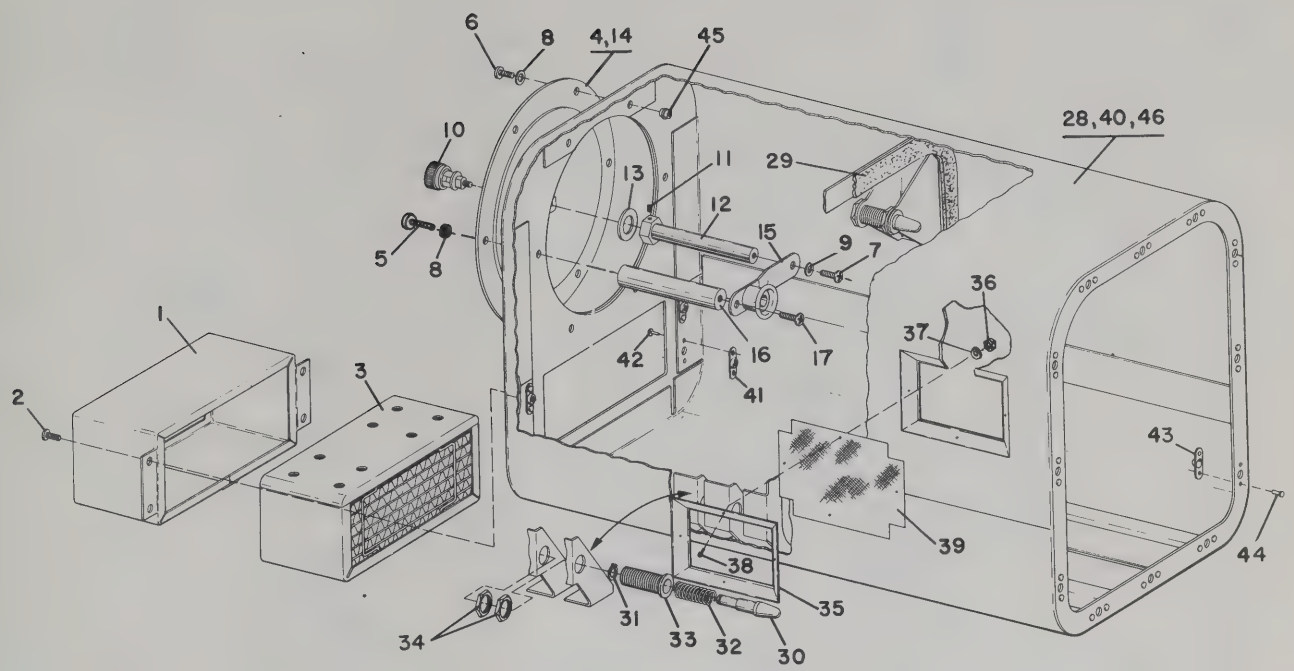


Figure 5-12. Case Assembly.

FIG. - ITEM	PART NO.	INDENT.	NOMENCLATURE	UNITS PER ASSY.	USAGE CODE
5-12	NO NUMBER	1	CASE ASSEMBLY SEE FIG. 5-11-2 FOR NHA	REF	
1	544-0122-003	2	NEST, FIL	1	
2	P343-0309-00 0	2	SCREW, MACH., NI PL BRS, PAN HD, 8-32 X 3/8 77250 343-0309-000 AP	4	
3	A10001	2	FILTER 21585 009-0003-000	1	
4	548-8258-002	2	KIT, MODIFICATION	1	
5	P343-0334-00 0	2	SCREW, MACH., NI PL BRS, PAN HD, 6-32 X 3/4 77250 343-0334-000 AP	1	
6	P343-0330-00 0	2	SCREW, MACH., NI PL BRS, PAN HD, 6-32 X 3/8 77250 343-0330-000 AP	5	
7	P343-0328-00 0	2	SCREW, MACH., NI PL BRS, PAN HD, 6-32 X 1/4 77250 343-0328-000 AP	1	
8	310-0055-000	2	WASHER, FLAT, NI PL BRS, 0.147 ID, 0.312 OD COML AP	6	
9	310-0078-000	2	WASHER, LOCK, BRZ, 0.141 ID, 0.239 OD COML AP	1	

FIG. - ITEM	PART NO.	INDENT.	NOMENCLATURE		UNITS PER ASSY.	USAGE CODE
5-12 10	9779-2	3	POST 72825 372-1540-000		1	
11	335-0022-000	3	SETSCREW, SST, 6-40 X 1/8 COML AP		1	
12	543-9850-002	3	POST, HEX.		1	
13	310-0058-000	3	WASHER, FLAT, NI PL BRS, 0.172 ID, 0.437 OD COML		1	
14	543-9836-002	3	PLATE, INSULATION		1	
15	544-0104-002	2	STRAP, SOLDERED	1J5	1	
16	544-0099-002	2	POST, H-V		1	
17	P343-0287-000	2	SCREW, MACH., NI PL BRS, PAN HD, 4-40 X 3/8 77250 343-0287-000 AP FOR 15 AND 16		1	
18		1	DELETED			
19		1	DELETED			
20		1	DELETED			
21		1	DELETED			
22		1	DELETED			
23		1	DELETED			
24		1	DELETED			
25		1	DELETED			
26		1	DELETED			
27		1	DELETED			
28	544-0120-003	2	CASE ASSY EFF THRU MCN 1000		1	C1
28	546-3346-003	2	CASE ASSY EFF MCN 1001		1	C2
29	544-0110-003	3	SEAL, GEAR PLATE		1	C1
30	543-9826-002	3	PIN, LOCATING		2	
31	MS16624-18	3	RING 340-0004-000 AP		2	
32	543-9828-002	3	SPRING, PIN		2	
33	543-9827-002	3	BUSHING, LOCATING PIN		2	
34	P334-0272-000	3	NUT, PLAIN, HEX., SST, 7/16-28 77250 334-0272-000 AP		4	
35	544-2608-002	3	FRAME, AIR SCRN		1	C1
36	MS35649-44	3	NUT, PLAIN, HEX., SST, 4-40 313-0043-000 AP		4	C1
37	310-0278-000	3	WASHER, LOCK, SST, 0.115 ID, 0.202 OD COML AP		4	C1
38	MS51957-14	3	SCREW, MACH., SST, PAN HD, 4-40 X 5/16 343-0134-000 AP		4	C1
39	544-2607-002	3	SCREEN		5	C1
40	544-0136-005	3	CASE, FABRICATED		1	C1
	546-3344-005	3	CASE, FABRICATED		1	C2
41	K1913-08	4	NUT, SELF-LKG, PLAIN, CAD. PL STL, 8-32 75237 334-1034-000		4	
42	MS20426AD3-4	4	RIVET, SOLID, AL, 3/32 DIA X 1/4 LG SHK 305-1362-000 AP		8	
43	546-0338-002	4	NUT, ANCHOR		12	
44	MS20426AD3-6	4	RIVET, SOLID, AL, 3/32 DIA X 3/8 LG SHK 305-1364-000 AP		24	
45	K7000-06-6	4	NUT, SELF-LKG, CLINCH, CAD. PL STL, 6-32 75237 334-1045-000		6	
46	544-0135-005	4	CASE, WELDED		1	C1
46	546-3343-005	4	CASE, FABRICATED		1	C2

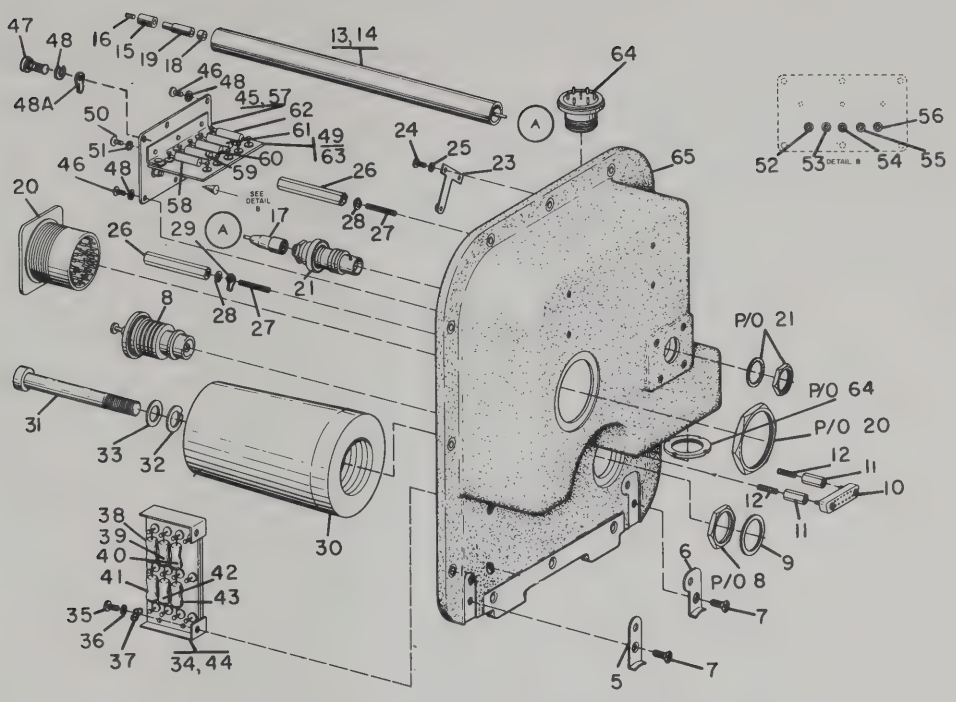


Figure 5-13. Front Cover Assembly.

FIG. - ITEM	PART NO.	INDENT.	NOMENCLATURE		UNITS PER ASSY.	USAGE CODE
5-13	544-0133-004	1	COVER ASSY, FRONT SEE FIG. 5-11-16 FOR NHA		REF	
1		1	DELETED			
2		1	DELETED			
3		1	DELETED			
4		1	DELETED			
5	543-9982-002	2	ANGLE, MOUNT		1	
6	544-0068-002	2	ANGLE, MOUNT		1	
7	MS51959-26	2	SCREW, MACH., SST, FH, 6-32 X 1/4 342-0060-000 AP FOR 5 AND 6		3	
8	MS90273-705A	2	CONNECTOR 357-9356-000	1J4	1	
9	543-9838-002	2	NUT, PLAIN AP		1	
R 10	SMRE7SG	2	CONNECTOR 81312 372-1698-000 EFF THRU MCN 1947	1J1	1	
R 10	MM7-22SGDSS	2	CONNECTOR 95238 372-5319-000 EFF MCN 1948	1J1	1	
11	540-9006-003	2	POST, ELECTRICAL-MECHANICAL EQUIP. AP		2	
12	P312-3450-000	2	STUD, CONTINUOUS THD, CAD. PL BRS, 2-56 X 3/8 77250 312-3450-000 AP		2	

FIG. - ITEM		PART NO.	INDENT.	NOMENCLATURE		UNITS PER ASSY.	USAGE CODE
5-13	13	544-0106-000	2	CABLE ASSY		1	
	14	544-0047-002	3	TUBE, INSULATOR		1	
	15	544-0090-002	3	CONNECTOR		1	
	16	4-48X1-8 6SP LINEGVPT18-8 SST	3	SETSCREW, SST, 4-48 X 1/8 08664 335-0019-000 AP		1	
	17	30-181-11	3	CABLE ASSY 98278 426-1673-000		1	
	18	543-5645-003	3	WASHER		1	
	19	544-0065-002	3	BAYONET, COAX		1	
	20	PB07C18-32P	3	CONNECTOR 77820 371-1005-000	1J3	1	
	21	33-90	2	ADAPTER 98278 357-9335-000	1J2	1	
	22		1	DELETED			
	23	543-9967-002	2	STRIP, GROUND		1	
	24	P343-0297-00 0	2	SCREW, MACH., NI PL BRS, PAN HD, 2-56 X 1/8 77250 343-0297-000 AP		2	
	25	310-0074-000	2	WASHER, LOCK, BRZ, 0.088 ID, 0.175 OD COML AP		2	
	26	543-9971-002	2	POST		2	
	27	P312-0097-00 0	2	STUD, CONTINUOUS THD, SST, 8-32 X 3/4 77250 312-0097-000 AP		2	
	28	MS35338-137	2	WASHER, LOCK, SST, 0.168 ID, 0.280 OD 310-0283-000 AP		2	
	29	2014-10HOTTI NNED	2	TERMINAL 77147 304-1800-000 AP		1	
	30	543-9868-002	2	CORE EFF THRU MCN 1026		1	
	30	553-4440-003	2	CORE, IRON EFF MCN 1027		1	
	31	543-9867-002	2	SCREW, CORE AP		1	
	32	310-0402-000	2	WASHER, LOCK, BRZ, 0.319 ID, 0.591 OD COML AP		1	
	33	310-0062-000	2	WASHER, FLAT, NI PL BRS, 0.343 ID, 0.750 OD COML AP		1	
	34	544-0087-002	2	BOARD ASSY, CAPACITOR		1	
	35	MS51957-12	2	SCREW, MACH., SST, PAN HD, 4-40 X 3/16 343-0132-000 AP		2	
	36	310-0278-000	2	WASHER, LOCK, SST, 0.115 ID, 0.202 OD COML AP		2	
	37	SPL4040-4HOT TINNED	2	TERMINAL 77147 304-0332-000 AP		1	
	38	HTS17-3000Z	3	CAPACITOR, FXD, 3000 PF P100M20%, 350 VDCW 00656 913-3339-000	1C11	1	
	39	HTS17-3000Z	3	CAPACITOR, FXD, 3000 PF P100M20%, 350 VDCW 00656 913-3339-000	1C12	1	
	40	HTS17-3000Z	3	CAPACITOR, FXD, 3000 PF P100M20%, 350 VDCW 00656 913-3339-000	1C13	1	
	41	HTS17-3000Z	3	CAPACITOR, FXD, 3000 PF P100M20%, 350 VDCW 00656 913-3339-000	1C14	1	
	42	HTS17-3000Z	3	CAPACITOR, FXD, 3000 PF P100M20%, 350 VDCW 00656 913-3339-000	1C15	1	
	43	HTS17-3000Z	3	CAPACITOR, FXD, 3000 PF P100M20%, 350 VDCW 00656 913-3339-000	1C16	1	
	44	544-0085-002	3	BOARD, CONDENSER		1	
	45	544-0061-002	2	FILTER ASSY, DISCR	1TB2	1	
	46	P343-0297-00 0	2	SCREW, MACH., NI PL BRS, PAN HD, 2-56 X 1/8 77250 343-0297-000 AP		5	
	47	P343-0298-00 0	2	SCREW, MACH., NI PL BRS, PAN HD, 2-56 X 3/16 77250 343-0298-000 AP		1	

FIG. - ITEM		PART NO.	INDENT.	NOMENCLATURE		UNITS PER ASSY.	USAGE CODE
5-13	48	310-0074-000	2	WASHER, LOCK, BRZ, 0.088 ID, 0.175 OD COML AP		6	
	48A	4012HOTTINNE D	2	TERMINAL 77147 304-2800-000 AP		1	
	49	543-9973-002	3	PLATE, CAPACITOR		1	
	50	P343-0297-00 0	3	SCREW, MACH., NI PL BRS, PAN HD, 2-56 X 1/8 77250 343-0297-000 AP		3	
	51	310-0074-000	3	WASHER, LOCK, BRZ, 0.088 ID, 0.175 OD COML AP		3	
	52	2465-009W5T0 102P	4	CAPACITOR, FXD, 1000 PF, 500 VDCW 72982 913-3209-000	1C6	1	
	53	2465-009W5T0 102P	4	CAPACITOR, FXD, 1000 PF, 500 VDCW 72982 913-3209-000	1C7	1	
	54	2465-009W5T0 102P	4	CAPACITOR, FXD, 1000 PF, 500 VDCW 72982 913-3209-000	1C8	1	
	55	2465-009W5T0 102P	4	CAPACITOR, FXD, 1000 PF, 500 VDCW 72982 913-3209-000	1C9	1	
	56	2465-009W5T0 102P	4	CAPACITOR, FXD, 1000 PF, 500 VDCW 72982 913-3209-000	1C10	1	
	57	544-0052-002	4	WASHER, LOCK		1	
	58	18-124	3	COIL, RF, 1 MH 09250 240-0313-000	1L2	1	
	59	18-124	3	COIL, RF, 1 MH 09250 240-0313-000	1L3	1	
	60	18-124	3	COIL, RF, 1 MH 09250 240-0313-000	1L4	1	
	61	18-124	3	COIL, RF, 1 MH 09250 240-0313-000	1L5	1	
	62	18-124	3	COIL, RF, 1 MH 09250 240-0313-000	1L6	1	
	63	544-0053-002	3	BOARD, FIL		1	
	64	178-2015	2	CONNECTOR 02660 357-9279-000	1TB1	1	
	65	553-7180-003	2	COVER, COUPLER		1	
5-14		NO NUMBER	1	ANTENNA COUPLER SUBASSEMBLY SEE FIG. 5-11-11 FOR NHA		REF	
	1	546-3458-002	2	BRACKET, ALIGN. EFF MCN 1001		1	
	2	P313-0051-00 0	2	NUT, PLAIN, HEX., NI PL BRS, 4-40 77250 313-0051-000 AP		1	
	3		1	DELETED			
	4	310-0054-000	2	WASHER, FLAT, NI PL BRS, 0.125 ID, 0.312 OD COML AP		1	
	5	P343-0286-00 0	2	SCREW, MACH., NI PL BRS, PAN HD, 4-40 X 5/16 77250 343-0286-000 AP		1	
	6	544-0760-003	2	ADAPTER, BLOWER EFF THRU MCN 1000		1	
	6	546-3305-004	2	ADAPTER, FAN EFF MCN 1001		1	
	7	543-9997-002	2	BAND, ADAPTER		1	
	8	MS51957-26	2	SCREW, MACH., SST, PAN HD, 6-32 X 1/4 343-0167-000 AP		1	
	9	500-1126-003	2	WASHER, FLAT AP		1	
	10	543-9882-002	2	SPACER, COIL		1	
	10A	543-9882-002	2	SPACER, COIL		1	

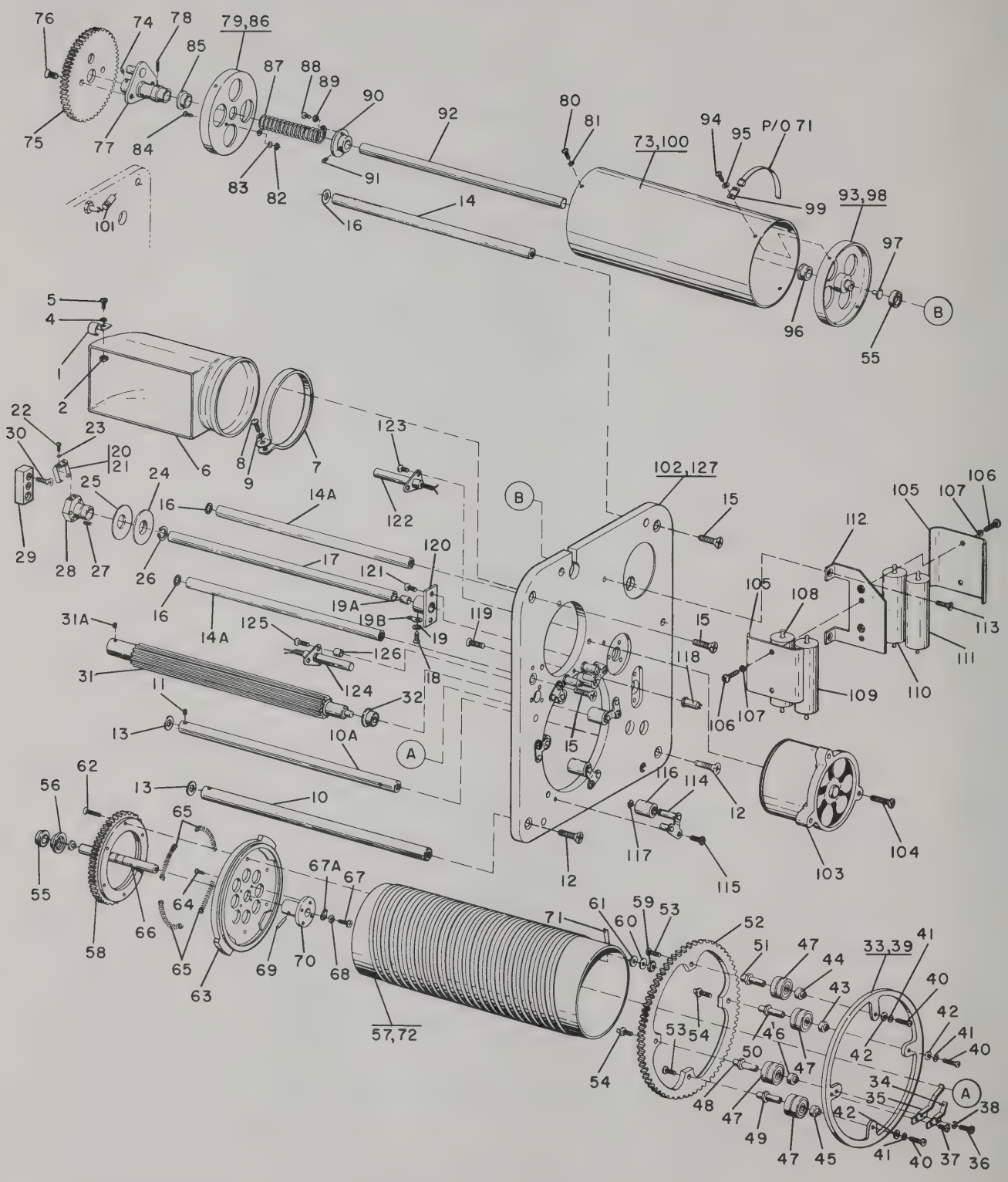


Figure 5-14. Antenna Coupler Subassembly.

FIG. - ITEM	PART NO.	INDENT.	NOMENCLATURE	UNITS PER ASSY.	USAGE CODE
5-14 11	4-48X1-8 6SP LINEOVPT18-8 SST	2	SETSCREW, SST, 4-48 X 1/8 08664 335-0019-000 AP FOR 10 AND 10A	1	
12	MS51959-46	2	SCREW, MACH., SST, FH, 8-32 X 5/8 342-0081-000 AP FOR 10 AND 10A	2	
13	500-1126-003	2	WASHER, FLAT AP FOR 10 AND 10A	2	
14	543-9972-002	2	SPACER, UPPER	1	
14A	543-9972-002	2	SPACER, UPPER	2	
15	MS51959-46	2	SCREW, MACH., SST, FH, 8-32 X 5/8 342-0081-000 AP FOR 14 AND 14A	3	
16	500-1126-003	2	WASHER, FLAT AP FOR 14 AND 14A	3	
17	543-9856-002	2	SHAFT, CENTER TAP	1	
18	P347-0091-00 0	2	SCREW, MACH., NI PL BRS, FIL H, 4-40 X 5/16 77250 347-0091-000 AP	1	
19	310-0396-000	2	WASHER, LOCK, BRZ, 0.115 ID, 0.202 OD COML AP	1	
19A	544-0063-002	2	NUT, SHAFT EFF THRU MCN 1000	1	
19B	1024-6HOTTIN NED	2	TERMINAL 77147 304-0140-000	1	
20	543-9930-002	2	HOUSING ASSY, TAP	1	
21	543-9929-002	3	CONTACT, ELECTRICAL	1	
22	P343-0297-00 0	3	SCREW, MACH., NI PL BRS, PAN HD, 2-56 X 1/8 77250 343-0297-000 AP	2	
23	310-0075-000	3	WASHER, LOCK, BRZ, 0.088 ID, 0.165 OD COML AP	2	
24	544-0049-002	3	WASHER, SHOULDERED	1	
25	543-5644-003	3	WASHER	1	
26	5100-37C	3	RING 79136 340-0043-000 AP FOR 24 AND 25	1	
27	544-0054-002	3	SPRING, HELICAL	4	
28	544-0028-002	3	HOUSING, TAP	1	
29	543-9969-002	2	SUPPORT, SHAFT	1	
30	P343-0288-00 0	2	SCREW, MACH., NI PL BRS, PAN HD, 4-40 X 7/16 77250 343-0288-000 AP	2	
31	553-5760-003	2	GEAR, SPUR, 18 TEETH	1	
31A	MS16562-192	2	PIN, SPG, SST, 0.062 DIA X 3/8 LG 311-0419-000 AP	1	
32	SFR168PPK28-7	2	BEARING 83086 309-0671-000	1	
33	544-2693-003	2	TAP ASSY, CENTER	1	
34	544-0694-002	3	CONTACT, ELECTRICAL	1	
35	544-0695-002	3	CONTACT, ELECTRICAL	1	
36	P343-0300-00 0	3	SCREW, MACH., NI PL BRS, PAN HD, 2-56 X 5/16 77250 343-0300-000 AP FOR 34 AND 35	1	
37	P343-0297-00 0	3	SCREW, MACH., NI PL BRS, PAN HD, 2-56 X 1/8 77250 343-0297-000 AP FOR 34 AND 35	1	
38	310-0075-000	3	WASHER, LOCK, BRZ, 0.088 ID, 0.165 OD COML AP FOR 34 AND 35	2	
39	544-0667-002	3	RING, ELECTRICAL CONT	1	
40	P343-0300-00 0	3	SCREW, MACH., NI PL BRS, PAN HD, 2-56 X 5/16 77250 343-0300-000 AP	3	
41	310-0075-000	3	WASHER, LOCK, BRZ, 0.088 ID, 0.165 OD COML AP	3	

FIG. - ITEM	PART NO.	INDENT.	NOMENCLATURE		UNITS PER ASSY.	USAGE CODE
5-14 42	310-0053-000	3	WASHER, FLAT, NI PL BRS, 0.093 ID, 0.250 OD COML AP		3	
43	544-2684-002	3	POST		1	
44	544-2683-002	3	POST		1	
45	544-2685-002	3	POST		1	
46	544-2686-002	3	POST		1	
47	544-2692-003	3	ROLLER		4	
48	544-2678-002	3	SHAFT		1	
49	544-2679-002	3	SHAFT		1	
50	544-2680-002	3	SHAFT		1	
51	544-2681-002	3	SHAFT		1	
52	544-2687-002	3	GEAR, 136 TEETH		1	
53	P343-0284-000	3	SCREW, MACH., NI PL BRS, PAN HD, 4-40 X 3/16 77250 343-0284-000 AP		2	
54	544-2682-002	3	PIN, STOP AP		2	
55	SFR168PPK28-7	2	BEARING 83086 309-0671-000		2	
56	544-2668-002	2	RING, CORONA		1	
57	544-0116-003	2	DRUM ASSY, H-V		1	
58	544-0623-002	3	GEAR, SPUR, 80 TEETH		1	
59	P313-0051-000	3	NUT, PLAIN, HEX., NI PL BRS, 4-40 77250 313-0051-000 AP		6	
60	310-0054-000	3	WASHER, FLAT, NI PL BRS, 0.125 ID, 0.312 OD COML AP		6	
61	302-0024-000	3	WASHER, NM, CORPRENE, 0.125 ID, 0.312 OD COML AP		6	
62	P342-0157-000	3	SCREW, MACH., NI PL BRS, FH, 4-40 X 5/8 77250 342-0157-000 AP		6	
63	544-2688-002	3	STOP, TAP		1	
64	P342-0156-000	3	SCREW, MACH., NI PL BRS, FH, 4-40 X 1/2 77250 342-0156-000 AP		4	
65	544-0655-002	3	SPRING, HELICAL		4	
66	544-2670-002	3	SHAFT, OUTPUT		1	
67	P343-0328-000	3	SCREW, MACH., NI PL BRS, PAN HD, 6-32 X 1/4 77250 343-0328-000 AP		1	
67A	2104-04-01-252UN	3	TERMINAL 78189 304-0317-000 AP		1	
68	310-0078-000	3	WASHER, LOCK, BRZ, 0.141 ID, 0.239 OD COML AP		1	
69	MS16562-191	3	PIN, SPG, SST, 0.062 DIA X 5/16 LG 311-0418-000 AP		1	
70	544-2689-002	3	FLANGE, BOLTING		1	
71	998-0026-000	3	RIBBON 94084	1L1	1	
72	544-0112-003	3	FORM, COIL		1	
73	544-0117-003	2	DRUM ASSY, L-V		1	
74	MS16562-192	2	PIN, SPG, SST, 0.062 DIA X 3/8 LG 311-0419-000 AP		1	
75	543-9878-002	3	GEAR, DRUM, 80 TEETH		1	
76	MS51959-13	3	SCREW, MACH., SST, FH, 4-40 X 1/4 342-0044-000 AP		2	
77	553-5674-002	3	HUB, GEAR		1	
78	MS16562-193	3	PIN, SPG, SST, 0.062 DIA X 7/16 LG 311-0420-000 AP		1	
79	543-9942-002	3	PLATE, END		1	
80	P343-0298-000	3	SCREW, MACH., NI PL BRS, PAN HD, 2-56 X 3/16 77250 343-0298-000 AP		4	

FIG. - ITEM	PART NO.	INDENT.	NOMENCLATURE		UNITS PER ASSY.	USAGE CODE
5-14 81	1902-00CADPL	3	WASHER, LOCK, CAD. PL BRZ, 0.095 ID, 0.185 OD 78189 373-3120-000 AP		4	
82	P313-0051-00 0	3	NUT, PLAIN, HEX., NI PL BRS, 4-40 77250 313-0051-000 AP		1	
83	310-0045-000	3	WASHER, FLAT, SST, 0.125 ID, 0.312 OD COML AP		1	
84	P343-0285-00 0	3	SCREW, MACH., NI PL BRS, PAN HD, 4-40 X 1/4 77250 343-0285-000 AP		1	
85	543-9840-002	4	BEARING		1	
86	543-9858-002	4	PLATE, END		1	
87	543-9908-002	3	SPRING, LOADING		1	
88	P343-0284-00 0	3	SCREW, MACH., NI PL BRS, PAN HD, 4-40 X 3/16 77250 343-0284-000 AP		1	
89	310-0045-000	3	WASHER, FLAT, SST, 0.125 ID, 0.312 OD COML AP		1	
90	543-9884-002	3	SUPPORT, SPG		1	
91	6-32X1-8 4SP LINEOVPT18-8 SST	3	SETSCREW, SST, 6-32 X 1/8 08664 335-0020-000 AP		2	
92	543-9876-002	3	SHAFT, DRUM		1	
93	543-9903-002	3	PLATE, END		1	
94	P343-0298-00 0	3	SCREW, MACH., NI PL BRS, PAN HD, 2-56 X 3/16 77250 343-0298-000 AP		4	
95	1902-00CADPL	3	WASHER, LOCK, CAD. PL BRZ, 0.095 ID, 0.185 OD 78189 373-3120-000 AP		4	
96	543-9840-002	4	BEARING		1	
97	543-9893-002	4	CONTACT, GROUND		1	
98	543-9974-002	4	PLATE, END		1	
99	506-0962-002	3	LUG, RIBBON		1	
100	543-9865-002	3	DRUM, LOADING		1	
101	RC32GF104K	2	RESISTOR, FXD, 0.10 MEG 10%, 1 W 745-3436-000	1R1	1	
102	544-0127-004	2	PLATE ASSY, END		1	
103	A0-15497-2	3	FAN 82877 009-1376-000	1B4	1	
104	MS51957-30	3	SCREW, MACH., SST, PAN HD, 6-32 X 1/2 343-0171-000 AP		3	
105	543-9857-002	3	CLAMP, CAPACITOR		2	
106	P343-0016-00 0	3	SCREW, MACH., SST, PAN HD, 4-40 X 1-1/8 77250 343-0016-000 AP		4	
107	MS35338-135	3	WASHER, LOCK, SST, 0.115 ID, 0.212 OD 310-0279-000 AP		4	
108	P96852	3	CAPACITOR, FXD, 0.47 UF 10%, 230 VDCW 56289 931-8421-000	1C2	1	
109	P96852	3	CAPACITOR, FXD, 0.47 UF 10%, 230 VDCW 56289 931-8421-000	1C3	1	
110	P96852	3	CAPACITOR, FXD, 0.47 UF 10%, 230 VDCW 56289 931-8421-000	1C4	1	
111	P96852	3	CAPACITOR, FXD, 0.47 UF 10%, 230 VDCW 56289 931-8421-000	1C5	1	
112	543-9983-002	3	BRACKET, CAPACITOR		1	
113	MS51959-14	3	SCREW, MACH., SST, FH, 4-40 X 5/16 342-0045-000 AP		2	
114	543-9937-002	3	SUPPORT, ROLLER		6	
115	MS51957-27	3	SCREW, MACH., SST, PAN HD, 6-32 X 5/16 343-0168-000 AP		6	

FIG. - ITEM		PART NO.	INDENT.	NOMENCLATURE		UNITS PER ASSY.	USAGE CODE
5-14	116	543-9896-002	3	ROLLER, COIL		6	
	117	MS16633-1018	3	RING 340-0090-000 AP		6	
	118	2A1DB12	3	TERMINAL 92825 306-0234-000		3	
	119	P343-0289-00 0	3	SCREW, MACH., NI PL BRS, PAN HD, 4-40 X 1/2 77250 343-0289-000 AP		3	
	120	543-9880-002	3	SUPPORT, CENTER TAP		1	
	121	MS51959-12	3	SCREW, MACH., SST, FH, 4-40 X 3/16 342-0043-000 AP		2	
	122	67321-0-122	3	SWITCH 73168 267-0071-000	1S13	1	
	123	P343-0285-00 0	3	SCREW, MACH., NI PL BRS, PAN HD, 4-40 X 1/4 77250 343-0285-000 AP		3	
	124	67321-0-212	3	SWITCH 73168 267-0070-000	1S12	1	
	125	P343-0289-00 0	3	SCREW, MACH., NI PL BRS, PAN HD, 4-40 X 1/2 77250 343-0289-000 AP		3	
	126	541-5977-002	3	SPACER, SLV AP		3	
	127	544-0132-004	3	PLATE, END		1	
5-15		544-0134-005	1	GEAR PLATE ASSY SEE FIG. 5-11-12 FOR NHA		REF	
	1	190907A	2	SWITCH SECTION 76854 269-1992-000	1S4	1	
	2	68-1660-26	2	NUT, SELF-LKG, HEX., AL, 2-56 72962 333-0604-000 AP		2	
	3	543-9987-002	2	SPACER, SLV AP		2	
	3A	15517-002	2	WASHER, NM, FIBER, 0.088 ID, 0.150 OD 76854 269-8031-000 AP		2	
	4	P343-0473-00 0	2	SCREW, MACH., CAD. PL STL, PAN HD, 2-56 X 1-1/8 77250 343-0473-000 AP		2	
	5	543-9986-002	2	SPACER		2	
	6	5133-25C	2	RING 79136 340-0254-000		1	
	7	500-1086-003	2	WASHER		AR	
	7A	500-1084-003	2	WASHER		AR	
	7B	504-0725-003	2	WASHER		AR	
R	8	544-0114-003	2	PLATE, SWITCHING ASSY		1	
	9	544-0043-002	2	NUT, ANTI CORONA AP		3	
	10	545-7546-003	2	WASHER AP		4	
	11	543-9848-002	2	POST, SPACING AP		4	
	12	543-5649-003	2	WASHER AP		4	
	12A	P312-0008-00 0	2	STUD, CONTINUOUS THD, SST, 4-40 X 7/16 77250 312-0008-000 AP		3	
	13	544-0056-002	2	SPACER, H-V SWITCH AP		3	
	14	P312-0010-00 0	2	STUD, CONTINUOUS THD, SST, 4-40 X 9/16 77250 312-0010-000 AP		3	
	15	P343-0295-00 0	2	SCREW, MACH., NI PL BRS, PAN HD, 4-40 X 1-1/4 77250 343-0295-000 AP		1	
	16	310-0396-000	2	WASHER, LOCK, BRZ, 0.115 ID, 0.202 OD COML AP		1	
	16A	SPL4040-4HOT TINNED	2	TERMINAL 77147 304-0332-000 AP		1	
	17	543-9981-002	2	SPACER, SLV AP		1	

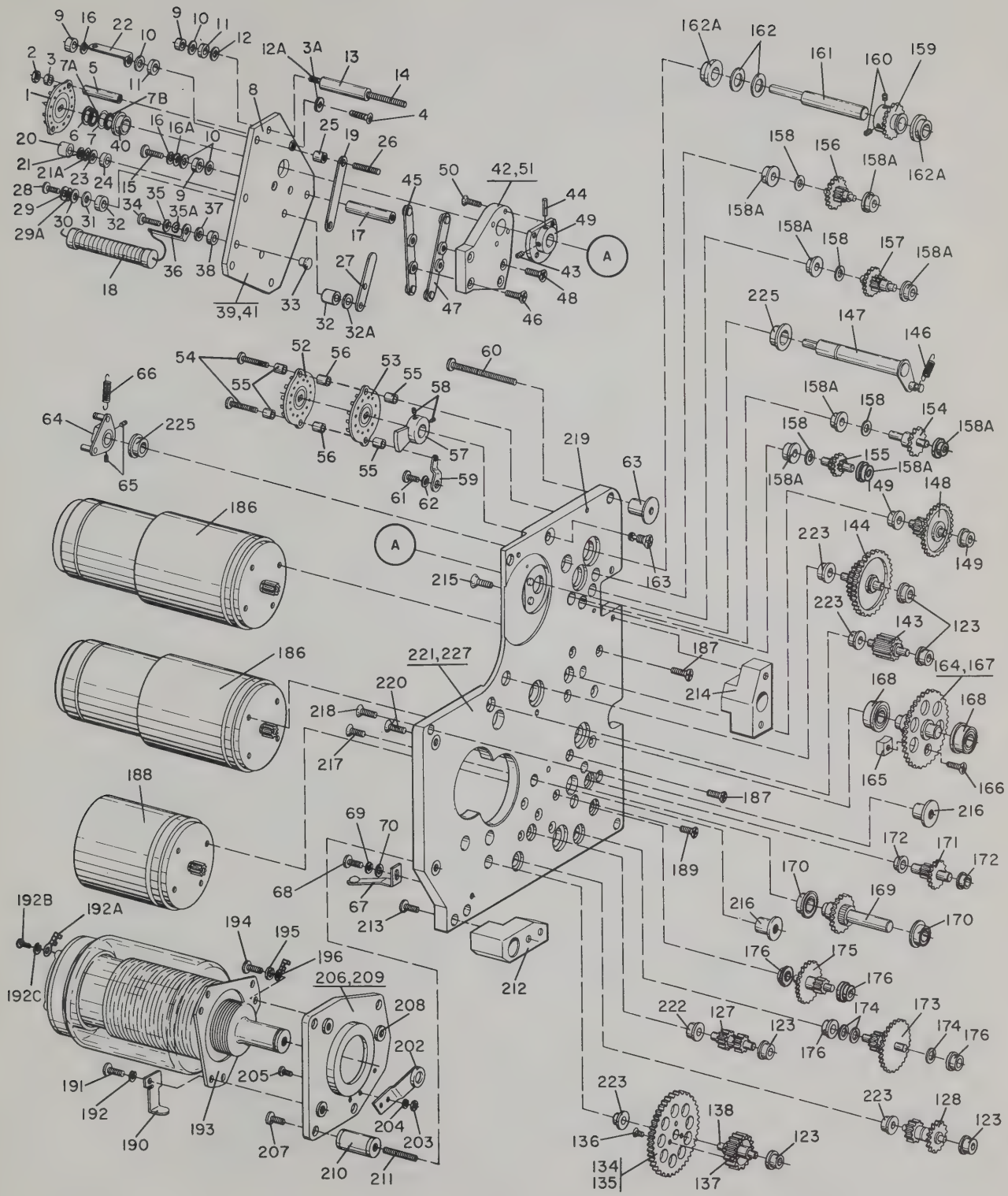


Figure 5-15. Gearplate Assembly (Sheet 1 of 2).

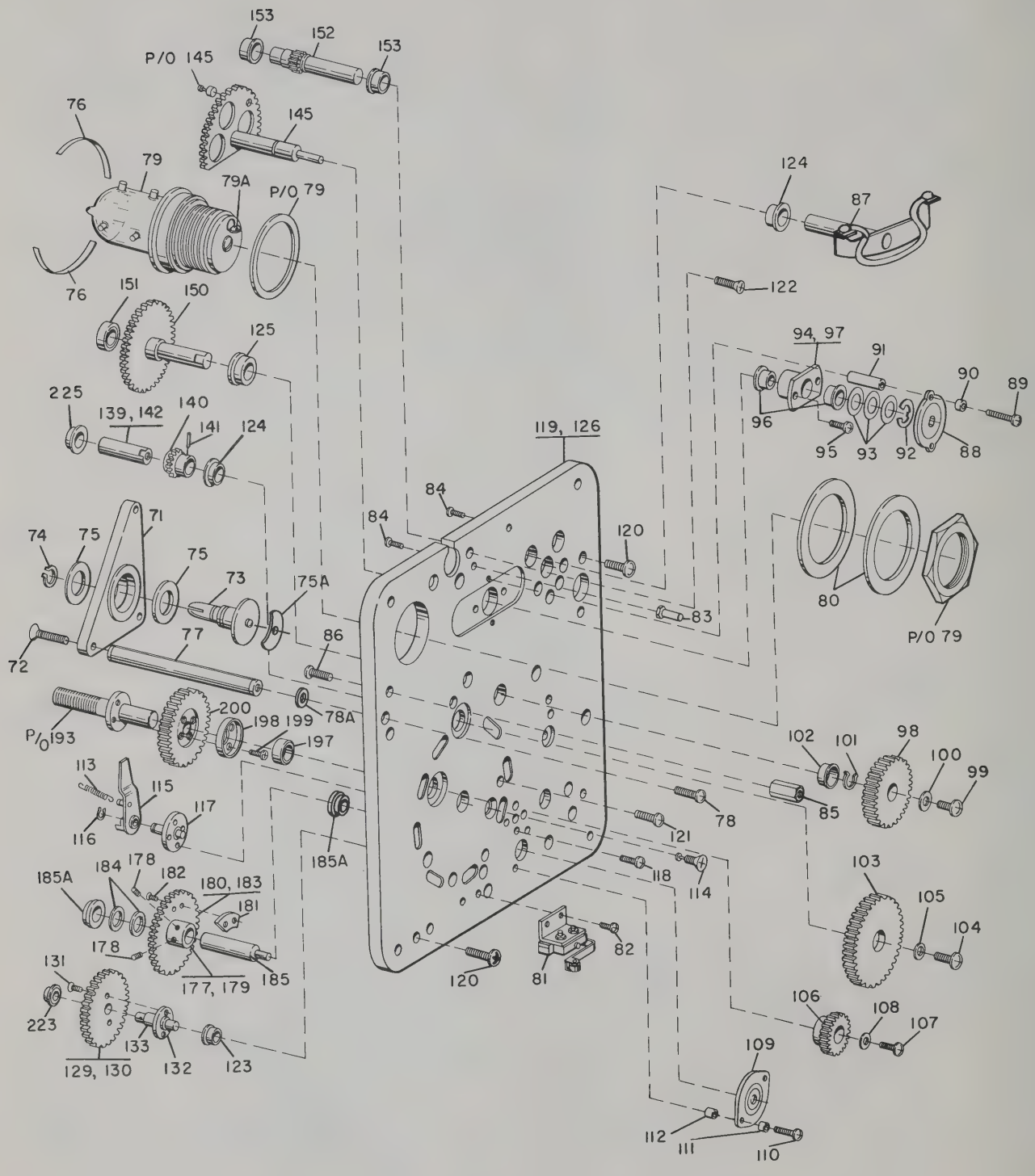


Figure 5-15. Gearplate Assembly (Sheet 2 of 2).

	FIG. - ITEM	PART NO.	INDENT.	NOMENCLATURE		UNITS PER ASSY.	USAGE CODE
	5-15 18	DCH2HV805-20	3	RESISTOR, FXD, 8 MEG 20%, 2 W 75042 705-4950-000	1R2	1	
	19	543-9956-002	3	STRIP, CONT		1	
	20	544-0043-002	3	NUT, ANTI CORONA AP		2	
	21	310-0076-000	3	WASHER, LOCK, BRZ, 0.115 ID, 0.212 OD COML AP		2	
R	21A	SPL4040-4HOT TINNED	3	TERMINAL 77147 304-0332-000 AP		1	
	22	544-0094-002	3	SUPPORT, RESISTOR AP		1	
	23	310-0054-000	3	WASHER, FLAT, NI PL BRS, 0.125 ID, 0.312 OD COML AP		2	
	24	543-5649-003	3	WASHER AP		2	
	25	543-9848-002	3	POST, SPACING AP		2	
	26	P312-0064-00 0	3	STUD, CONTINUOUS THD, CAD. PL BRS, 4-40 X 1/2 77250 312-0064-000 AP		2	
	27	543-9866-002	3	STRIP, GROUND		1	
	28	P343-0300-00 0	3	SCREW, MACH., NI PL BRS, PAN HD, 2-56 X 5/16 77250 343-0300-000 AP		2	
	29	310-0074-000	3	WASHER, LOCK, BRZ, 0.088 ID, 0.175 OD COML AP		2	
	29A	SPL4040-2HOT TINNED	3	TERMINAL 77147 304-0331-000 AP		1	
	30	310-0053-000	3	WASHER, FLAT, NI PL BRS, 0.093 ID, 0.250 OD COML AP OR		3	
R	30	310-0129-000	3	WASHER, FLAT, NI PL BRS, 0.089 ID, 0.188 OD COML AP		1	
	31	543-5649-003	3	WASHER AP		2	
	32	543-9848-002	3	POST, SPACING AP		2	
R	32A	542-7498-003	3	WASHER, SHIM AP		2	
	33	543-9959-002	3	CONTACT, H-V		2	
	34	P343-0298-00 0	3	SCREW, MACH., NI PL BRS, PAN HD, 2-56 X 3/16 77250 343-0298-000 AP		2	
	35	310-0074-000	3	WASHER, LOCK, BRZ, 0.088 ID, 0.175 OD COML AP		2	
	35A	SPL4040-2HOT TINNED	3	TERMINAL 77147 304-0331-000 AP		1	
	36	544-0094-002	3	SUPPORT, RESISTOR AP		1	
R	37	310-0054-000	3	WASHER, FLAT, NI PL BRS, 0.125 ID, 0.312 OD COML AP		2	
	38	543-5649-003	3	WASHER AP		2	
	39	543-9860-002	3	PLATE, SWITCH		1	
	40	543-9840-002	4	BEARING		1	
	41	544-0113-003	4	PLATE, SWITCH		1	
	42	543-9965-002	2	ROTOR ASSY, H-V	1S3	1	
	43	4-48X1-8 6SP LINEOVPT18-8 SST	2	SETSCREW, SST, 4-48 X 1/8 08664 335-0019-000 AP		2	
	44	MS16562-194	2	PIN, SPG, SST, 0.062 DIA X 1/2 LG 311-0421-000 AP		1	
	45	543-9990-002	3	CONTACT, ELECTRICAL		1	
	46	P347-0089-00 0	3	SCREW, MACH., NI PL BRS, FIL H, 4-40 X 3/16 77250 347-0089-000 AP		2	
	47	543-9963-002	3	CONTACT ASSY, ELECTRICAL		1	

FIG. - ITEM		PART NO.	INDENT.	NOMENCLATURE		UNITS PER ASSY.	USAGE CODE
5-15	48	P347-0089-000	3	SCREW, MACH., NI PL BRS, FIL H, 4-40 X 3/16 77250 347-0089-000 AP		2	
	49	543-9914-002	3	HUB		1	
	50	P343-0298-000	3	SCREW, MACH., NI PL BRS, PAN HD, 2-56 X 3/16 77250 343-0298-000 AP		3	
	51	543-9958-002	3	INSULATOR, PLATE		1	
	52	190909A	2	SWITCH SECTION 76854 269-1995-000	1S10	1	
	53	190910A	2	SWITCH SECTION 76854 269-1994-000	1S7	1	
	54	P343-0005-000	2	SCREW, MACH., SST, PAN HD, 2-56 X 5/8 77250 343-0005-000 AP FOR 52 AND 53		2	
	55	543-9987-002	2	SPACER, SLV AP FOR 52 AND 53		4	
	56	553-9830-002	2	SPACER, SLV AP FOR 52 AND 53		2	
	57	543-9823-002	2	CAM, STOP		1	
	58	4-48X1-8 6SP LINEOVPT18-8 SST	2	SETSCREW, SST, 4-48 X 1/8 08664 335-0019-000 AP		2	
	59	543-9861-002	2	BRACKET, SWITCH		1	
	60	P347-0159-000	2	SCREW, MACH., NI PL BRS, FIL H, 8-32 X 1/4 77250 347-0159-000 AP		1	
	61	P347-0050-000	2	SCREW, MACH., SST, FIL H, 8-32 X 5/16 77250 347-0050-000 AP		1	
	62	MS35338-137	2	WASHER, LOCK, SST, 0.168 ID, 0.280 OD 310-0283-000 AP		1	
	63	544-0091-002	2	POST AP		1	
	64	543-9948-002	2	ACTUATOR, STOP		1	
	65	4-48X1-8 6SP LINEOVPT18-8 SST	2	SETSCREW, SST, 4-48 X 1/8 08664 335-0019-000 AP		2	
	66	543-9957-002	2	SPRING, STOP		1	
	67	544-0079-002	2	ANGLE, CONT GAP		1	
	68	P343-0286-000	2	SCREW, MACH., NI PL BRS, PAN HD, 4-40 X 5/16 77250 343-0286-000 AP		1	
	69	310-0396-000	2	WASHER, LOCK, BRZ, 0.115 ID, 0.202 OD COML AP		1	
	70	545-7546-003	2	WASHER AP		1	
	71	544-0097-002	2	BOARD, CONT		1	
	72	P342-0155-000	2	SCREW, MACH., NI PL BRS, FH, 4-40 X 7/16 77250 342-0155-000 AP		3	
	73	544-0102-002	2	PIN, OUTPUT	1P1	1	
	74	MS16624-1037	2	RING 340-0013-000 AP		1	
	75	553-5005-003	2	WASHER AP		2	
	75A	502-5197-002	2	WASHER, TENS AP		1	
	76	544-0103-002	2	LEAD, ELECTRICAL		1	
	77	544-0096-002	2	POST		3	
	78	P343-0288-000	2	SCREW, MACH., NI PL BRS, PAN HD, 4-40 X 7/16 77250 343-0288-000 AP		3	
	78A	310-0054-000	2	WASHER, FLAT, NI PL BRS, 0.125 ID, 0.312 OD COML AP		3	
	79	RB3-26D737	2	RELAY 73905 410-0168-000	1K1	1	
R	79A	491-32-11-080-933	2	TERMINAL 71785 304-0011-000 AP		2	
	80	543-5658-003	2	WASHER AP		2	

FIG. - ITEM	PART NO.	INDENT.	NOMENCLATURE		UNITS PER ASSY.	USAGE CODE
5-15 81	548-1337-002	2	SWITCH ASSY	1S1	1	
82	P343-0285-00 0	2	SCREW, MACH., NI PL BRS, PAN HD, 4-40 X 1/4 77250 343-0285-000 AP		2	
83	TF300	2	TERMINAL 98291 306-1018-000		2	
84	P343-0300-00 0	2	SCREW, MACH., NI PL BRS, PAN HD, 2-56 X 5/16 77250 343-0300-000 AP		2	
85	540-9168-003	2	POST, ELECTRICAL-MECHANICAL EQUIP.		1	
86	P343-0288-00 0	2	SCREW, MACH., NI PL BRS, PAN HD, 4-40 X 7/16 77250 343-0288-000 AP		1	
87	547-3773-003	2	STOP, DRUM		1	
88	190908A	2	SWITCH SECTION 76854 269-1993-000	1S5	1	
89	P347-0112-00 0	2	SCREW, MACH., NI PL BRS, FIL H, 2-56 X 7/8 77250 347-0112-000 AP		2	
90	543-9987-002	2	SPACER, SLV AP		2	
91	543-9985-002	2	SPACER AP		2	
92	5133-25C	2	RING 79136 340-0254-000		1	
93	543-5650-003	2	WASHER		AR	
94	543-9887-002	2	HUB, SUPPORT		1	
95	P343-0285-00 0	2	SCREW, MACH., NI PL BRS, PAN HD, 4-40 X 1/4 77250 343-0285-000 AP		2	
96	544-0795-002	3	BEARING		2	
97	543-9907-002	3	HUB, SUPPORT		1	
98	544-0011-002	2	GEAR, DRUM, 40 TEETH		1	
99	P343-0285-00 0	2	SCREW, MACH., NI PL BRS, PAN HD, 4-40 X 1/4 77250 343-0285-000 AP		1	
100	545-7546-003	2	WASHER AP		1	
101	5100-25C	2	RING 79136 340-0038-000		1	
102	SFR168PPK25-26	2	BEARING 83086 309-0814-000		1	
103	544-0009-002	2	GEAR, 52 TEETH		1	
104	P343-0285-00 0	2	SCREW, MACH., NI PL BRS, PAN HD, 4-40 X 1/4 77250 343-0285-000 AP		1	
105	545-7546-003	2	WASHER AP		1	
106	544-0010-002	2	GEAR, 20 TEETH		1	
107	P343-0285-00 0	2	SCREW, MACH., NI PL BRS, PAN HD, 4-40 X 1/4 77250 343-0285-000 AP		1	
108	545-7546-003	2	WASHER AP		1	
109	190909A	2	SWITCH SECTION 76854 269-1995-000	1S14	1	
110	MS51957-7	2	SCREW, MACH., SST, PAN HD, 2-56 X 1/2 343-0128-000 AP		2	
111	543-9987-002	2	SPACER, SLV AP		2	
112	553-9829-002	2	SPACER AP		2	
113	543-9957-002	2	SPRING, STOP		1	
114	543-9905-002	2	SCREW, ANCHOR		1	
115	544-0044-002	2	ARM, STOP		1	
116	MS16624-12	2	RING 340-0021-000 AP		1	
117	544-0022-002	2	PIN, STOP		1	
118	P343-0285-00 0	2	SCREW, MACH., NI PL BRS, PAN HD, 4-40 X 1/4 77250 343-0285-000 AP		4	

FIG. - ITEM	PART NO.	INDENT.	NOMENCLATURE	UNITS PER ASSY.	USAGE CODE
5-15 I19	544-0128-004	2	PLATE, GEAR	1	
120	MS51959-28	2	SCREW, MACH., SST, FH, 6-32 X 3/8 342-0062-000 AP	4	
121	P343-0309-000	2	SCREW, MACH., NI PL BRS, PAN HD, 8-32 X 3/8 77250 343-0309-000 AP	1	
122	P342-0183-000	2	SCREW, MACH., NI PL BRS, FH, 8-32 X 5/16 77250 342-0183-000 AP	1	
123	543-9839-002	3	BEARING	5	
124	543-9840-002	3	BEARING	2	
125	544-0066-002	3	BEARING, SPL	1	
126	544-0130-004	3	PLATE, GEAR	1	
127	543-9833-002	2	GEAR SHAFT, SPUR, 24 TO 30 TEETH	1	
128	543-9949-002	2	GEAR, SOLDERED, 18 TO 60 TEETH	1	
129	543-9951-002	2	GEAR ASSY, 40 TEETH	1	
130	544-0012-002	3	GEAR, 40 TEETH	1	
131	MS51959-2	3	SCREW, MACH., SST, FH, 2-56 X 3/16 342-0132-000 AP	2	
132	543-9845-002	3	HUB, GEAR	1	
133	543-9871-002	3	SHAFT	1	
134	543-9950-002	2	GEAR ASSY, 20 TO 70 TEETH	1	
135	543-9849-002	3	GEAR, 70 TEETH	1	
136	P342-0142-000	3	SCREW, MACH., NI PL BRS, FH, 2-56 X 3/16 77250 342-0142-000 AP	3	
137	543-9847-002	3	GEAR, SPUR, 20 TEETH	1	
138	543-9870-002	3	SHAFT	1	
139	543-9953-002	2	GEAR, PINNED, 35 TEETH	1	
140	543-9851-002	3	GEAR, 35 TEETH	1	
141	MS16562-192	3	PIN, SPG, SST, 0.062 DIA X 3/8 LG 311-0419-000 AP	1	
142	543-9993-002	3	SHAFT, DRIVE	1	
143	543-9834-002	2	GEAR, CAP, 24 TEETH	1	
144	543-9952-002	2	GEAR, SOLDERED, 24 TO 81 TEETH	1	
145	544-9464-002	2	GEAR, SHAFT ASSY	1	
146	544-0080-002	2	SPRING, SWITCH	1	
147	548-8041-002	2	SHAFT, SWITCH	1	
148	543-9891-002	2	GEAR, SOLDERED, 19 TO 100 TEETH	1	
149	SFR144PPK25-26	2	BEARING 83086 309-0784-000	2	
150	543-9943-002	2	GEAR, DRUM, 99 TEETH	1	
151	SFR168PPK25-26	2	BEARING 83086 309-0814-000	1	
152	543-9869-002	2	GEAR, DRUM, 30 TEETH	1	
153	SFR168PPK25-26	2	BEARING 83086 309-0814-000	2	
154	543-9921-002	2	GEAR ASSY, 48 TEETH	1	
155	543-9938-002	2	GEAR, PRESSED, 20 TO 42 TEETH	1	
156	543-9940-002	2	GEAR, PRESSED, 20 TO 54 TEETH	1	
157	543-9939-002	2	GEAR, PRESSED, 20 TO 49 TEETH	1	
158	506-5938-003	2	WASHER, FLAT	4	
158A	SFR144PPK25-26	2	BEARING 83086 309-0784-000	8	
159	543-9892-002	2	GEAR, PRESSED, 64 TEETH	1	
160	4-48X1-8 6SP LINEOVPT18-8 SST	2	SETSCREW, SST, 4-48 X 1/8 08664 335-0019-000 AP	2	
161	543-9837-002	2	SHAFT, SWITCHING	1	
162	500-1084-003	2	WASHER	AR	
162A	SFR168PPK25-26	2	BEARING 83086 309-0814-000	2	

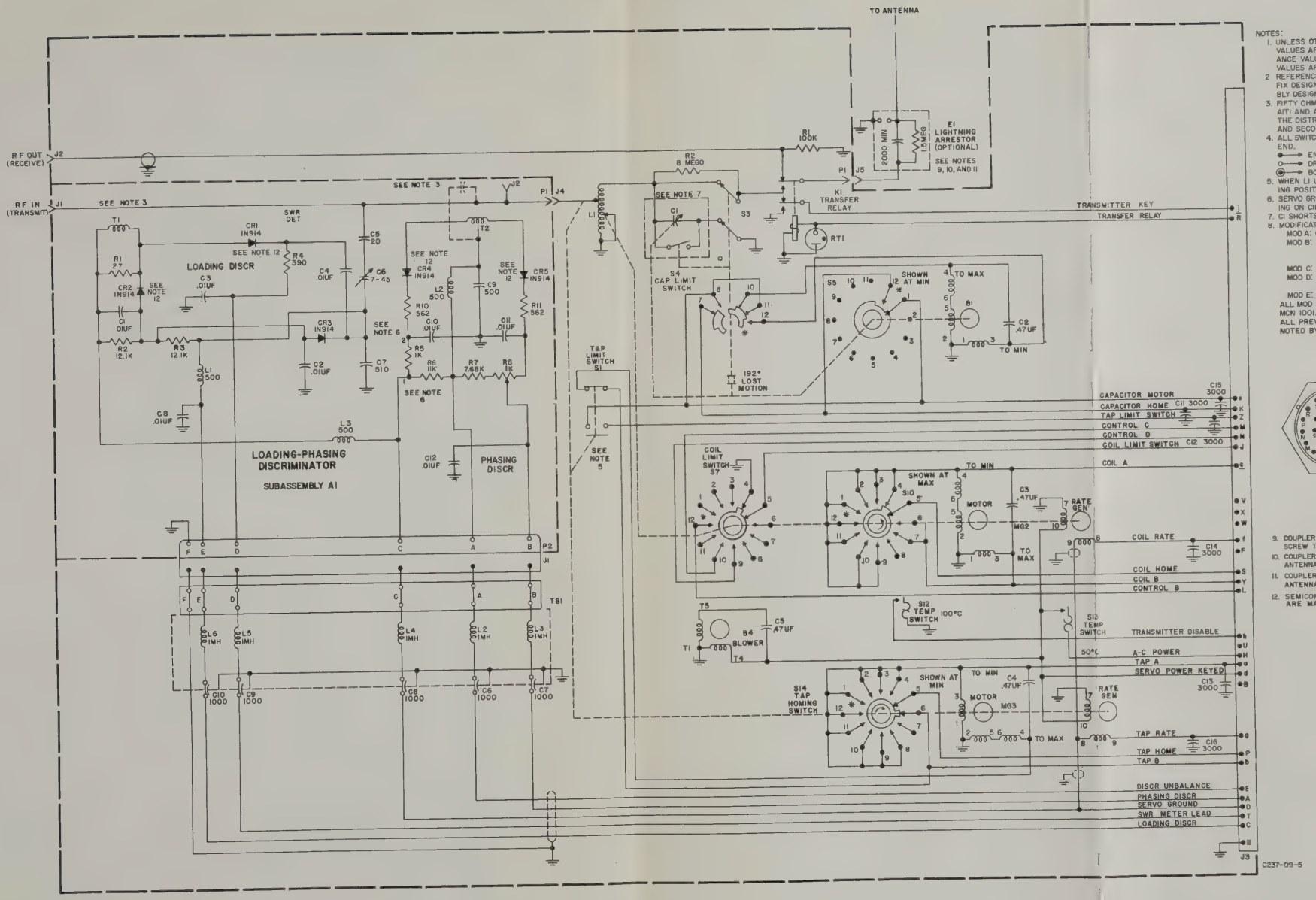
FIG. - ITEM	PART NO.	INDENT.	NOMENCLATURE		UNITS PER ASSY.	USAGE CODE
5-15 163	543-9905-002	2	SCREW, ANCHOR		1	
164	544-0046-002	2	STOP ASSY, CENTER TAPPED		1	
165	544-0003-002	3	STOP		1	
166	MS51959-14	3	SCREW, MACH., SST, FH, 4-40 X 5/16 342-0045-000 AP		1	
167	544-0035-002	3	GEAR, SOLDERED, 135 TEETH		1	
168	SFR168PPK25-26	2	BEARING 83086 309-0814-000		2	
169	544-0032-002	2	GEAR, SOLDERED, 30 TO 68 TEETH		1	
170	SFR168PPK25-26	2	BEARING 83086 309-0814-000		3	
171	543-9980-002	2	GEAR, PRESSED, 18 TO 56 TEETH		1	
172	SFR144PPK25-26	2	BEARING 83086 309-0784-000		2	
173	543-9932-002	2	GEAR, PRESSED, 18 TO 96 TEETH		1	
174	542-7498-003	2	WASHER		AR	
175	543-9931-002	2	GEAR, PRESSED, 18 TO 84 TEETH		1	
176	SFR144PPK25-26	2	BEARING 83086 309-0784-000		4	
177	543-9933-002	2	GEAR, PRESSED, 124 TEETH		1	
178	4-48X1-8 6SP LINEOVPT18-8 SST	2	SETSCREW, SST, 4-48 X 1/8 08664 335-0019-000 AP		2	
179	543-9916-002	3	HUB, GEAR		1	
180	543-9970-002	3	GEAR, ASSY, 124 TEETH		1	
181	544-0036-002	4	CAM, ACTUATING		1	
182	MS51959-2	4	SCREW, MACH., SST, FH, 2-56 X 3/16 342-0132-000 AP		2	
183	543-9918-002	4	GEAR, 124 TEETH		1	
184	500-1084-003	2	WASHER		AR	
185	543-9906-002	2	SHAFT, SWITCH DRIVE		1	
185A	SFR168PPK25-26	2	BEARING 83086 309-0814-000		2	
186	RS806-1B	2	MOTOR 88818 229-0128-000	1MG2,1MG3	2	
187	MS51959-13	2	SCREW, MACH., SST, FH, 4-40 X 1/4 342-0044-000 AP		8	
188	665-53-129	2	MOTOR 72568 229-0186-000	1B1	1	
189	MS51959-14	2	SCREW, MACH., SST, FH, 4-40 X 5/16 342-0045-000 AP		4	
190	544-0077-002	2	BRACKET, CONT GAP		1	
191	P347-0169-000	2	SCREW, MACH., NI PL BRS, FIL H, 6-32 X 1/4 77250 347-0169-000 AP		1	
192	310-0078-000	2	WASHER, LOCK, BRZ, 0.141 ID, 0.239 OD COML AP		1	
192A	1024-6HOTTINNED	2	TERMINAL 77147 304-0140-000		1	
192B	P343-0327-000	2	SCREW, MACH., NI PL BRS, PAN HD, 6-32 X 3/16 77250 343-0327-000 AP		1	
192C	310-0078-000	2	WASHER, LOCK, BRZ, 0.141 ID, 0.239 OD COML AP		1	
193	USLS-465	2	CAPACITOR, VAR, 5 TO 465 PF 73905 919-0160-000	1C1	1	
194	P347-0169-000	2	SCREW, MACH., NI PL BRS, FIL H, 6-32 X 1/4 77250 347-0169-000 AP		2	
195	310-0078-000	2	WASHER, LOCK, BRZ, 0.141 ID, 0.239 OD COML AP		2	

FIG. - ITEM	PART NO.	INDENT.	NOMENCLATURE	UNITS PER ASSY.	USAGE CODE
5-15 195A		1	DELETED		
196	1024-6HOTTIN NED	2	TERMINAL 77147 304-0140-000	1	
197	SFR168PPK25-26	2	BEARING 83086 309-0814-000	1	
198	543-9994-002	2	SHIELD, HUB	1	
199	P347-0103-00 0	2	SCREW, MACH., NI PL BRS, FIL H, 2-56 X 3/16 77250 347-0103-000 AP	4	
200	544-0008-002	2	GEAR, 42 TEETH	1	
201		1	DELETED		
202	544-2666-002	2	CONTACT, ELECTRICAL	1	
203	P313-0050-00 0	2	NUT, PLAIN, HEX., NI PL BRS, 2-56 77250 313-0050-000 AP	2	
204	310-0074-000	2	WASHER, LOCK, BRZ, 0.088 ID, 0.175 OD COML AP	2	
205	P342-0142-00 0	2	SCREW, MACH., NI PL BRS, FH, 2-56 X 3/16 77250 342-0142-000 AP	2	
206	544-2671-002	2	SHIELD, CORONA	1	
207	P347-0168-00 0	2	SCREW, MACH., NI PL BRS, FIL H, 6-32 X 3/16 77250 347-0168-000 AP	4	
208	CL632-2C	3	NUT, PLAIN, CLINCH, CAD. PL STL, 6-32 46384 334-0066-000	3	
209	544-2673-003	3	SHIELD, CORONA	1	
210	756-4721-003	2	INSULATOR, STANDOFF	4	
211	P312-0031-00 0	2	STUD, CONTINUOUS THD, SIL PL BRS, 6-32 X 5/16 77250 312-0031-000 AP	4	
212	543-9881-002	2	BLOCK, MTG	1	
213	MS51957-28	2	SCREW, MACH., SST, PAN HD, 6-32 X 3/8 343-0169-000 AP	2	
214	543-9886-002	2	BLOCK, MTG	1	
215	MS51957-28	2	SCREW, MACH., SST, PAN HD, 6-32 X 3/8 343-0169-000 AP	2	
216	544-0091-002	2	POST	4	
217	P343-0309-00 0	2	SCREW, MACH., NI PL BRS, PAN HD, 8-32 X 3/8 77250 343-0309-000 AP	2	
218	P347-0159-00 0	2	SCREW, MACH., NI PL BRS, FIL H, 8-32 X 1/4 77250 347-0159-000 AP	2	
219	543-9955-002	2	SCREW, STOP	2	
220	P342-0186-00 0	2	SCREW, MACH., NI PL BRS, FH, 8-32 X 1/2 77250 342-0186-000	1	
221	544-0129-004	2	PLATE, GEAR	1	
222	543-9830-002	2	BEARING, SPL	1	
223	543-9839-002	3	BEARING	5	
224		1	DELETED		
225	543-9840-002	3	BEARING	3	
226		1	DELETED		
227	544-0131-004	3	PLATE, GEAR	1	

SCHEMATIC CHANGES

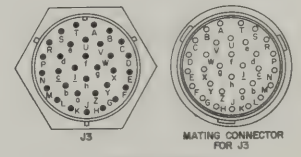
REVISION IDENTIFICATION	DESCRIPTION OF REVISION AND REASON FOR CHANGE	SERVICE BULLETIN	MCN EFFECTIVITY
	Changed CR4 and CR5 from matched 1N39B to matched 1N914. 1N39B diodes obsolete.	(1) 180R-6/6A	2595
	Changed CR2 and CR3 from matched 1N817 to matched 1N914. 1N817 diodes obsolete.	(1) 180R-6/6A	2595
	Replaced CR6 and CR7 with R10 and R11, due to CR4 and CR5 change.	(1) 180R-6/6A	2595
	CR1 was 1N817.	(1) 180R-6/6A	2595
	R7 was 11K.	(1) 180R-6/6A	2595
	R1 was 33 ohms.	(1) 180R-6/6A	2595
	C6 was 5-50.		

Figure 6-1. 180R-6 Antenna Coupler, Schematic Diagram (Sheet A).



NOTES:
1. UNLESS OTHERWISE INDICATED, ALL CAPACITANCE VALUES ARE IN MICROMICROFARADS, ALL RESISTANCE VALUES ARE IN OHMS AND ALL INDUCTANCE VALUES ARE IN MICROHENRYS.
2. REFERENCE DESIGNATIONS ARE ABBREVIATED PREFIX DESIGNATIONS WITH UNIT NUMBER OR SUBASSEMBLY DESIGNATION OR BOTH.
3. FIFTY OHM LINE FUNCTIONS AS PRIMARY FOR BOTH A1T1 AND A1T2. CAPACITOR SHOWN ACROSS A1T2 IS THE DISTRIBUTED CAPACITANCE BETWEEN PRIMARY AND SECONDARY.
4. ALL SWITCHES VIEWED FROM END OPPOSITE DRIVEN END.
   - ●⟶ END OPPOSITE DRIVEN END.
   - ○⟶ DRIVEN END.
   - ◉⟶ BOTH.
5. WHEN L1 LOADING ADJUSTMENT IS AT MAXIMUM LOADING POSITION IT MECHANICALLY OPERATES S1.
6. SERVO GROUND CONNECTED EITHER AT 1 OR 2 DEPENDING ON CIRCUIT BALANCE.
7. C1 SHORTS INTERNALLY WHEN DRIVEN PAST MAXIMUM.
8. MODIFICATION INFORMATION:
   - MOD A: CHANGE GEAR PLATE.
   - MOD B: NEW VACUUM CAPACITOR AND MOUNTING, REROUTE CABLE, NEW ROTARY TAP AND STOP, NEW SECTOR GEAR, CHANGE S3.
   - MOD C: CHANGE WAFER SWITCHES AND SWITCH SHAFTS
   - MOD D: ADD BALL BEARINGS TO COIL GEAR TRAIN, CHANGE LUBRICANT.
   - MOD E: CHANGE TO PRESSURIZED LIGHTNING ARRESTOR

   ALL MOD LETTER STAMPINGS WERE DISCONTINUED AT MCN 1001. UNITS WITH MCN ABOVE 1001 INCORPORATE ALL PREVIOUS MODS. FUTURE CHANGES WILL BE NOTED BY MCN ONLY.



CONNECTORS SHOWN AS THOUGH VIEWED FROM MATING SURFACES

9. COUPLER 180R-6 MAY HAVE LIGHTNING ARRESTOR OR SCREW TYPE JACK FOR ANTENNA CONNECTION.
10. COUPLER 180R-7 HAS LIGHTNING ARRESTOR FOR ANTENNA CONNECTION.
11. COUPLER 180R-7A HAS TYPE HN CONNECTOR FOR ANTENNA CONNECTION.
12. SEMICONDUCTORS CR1 AND CR2, CR4 AND CR5 ARE MATCHED PAIRS.

Figure 6-1. 180R-6 Antenna Coupler, Schematic Diagram.

SCHEMATIC CHANGES

REVISION IDENTIFICATION	DESCRIPTION OF REVISION AND REASON FOR CHANGE	SERVICE BULLETIN	MCN EFFECTIVITY
	Changed CR4 and CR5 from matched 1N39B to matched 1N914. 1N39B diodes obsolete.	(1) 180R-6/6A	2595
	Changed CR2 and CR3 from matched 1N817 to matched 1N914. 1N817 diodes obsolete.	(1) 180R-6/6A	2595
	Replaced CR6 and CR7 with R10 and R11 due to CR4 and CR5 change.	(1) 180R-6/6A	2595
	R1 was 33.	(1) 180R-6/6A	2595
	CR1 changed from 1N817 to 1N914.	(1) 180R-6/6A	2595
	R7 was 11K.	(1) 180R-6/6A	2595
	C6 was 5-50.		
	C19 (230) was C6 (230).		
	C17 (0.05) was C7 (0.05).		
	C18 (0.05) was C8 (0.05).		

Figure 6-2. 180R-6A Antenna Coupler, Schematic Diagram (Sheet A).

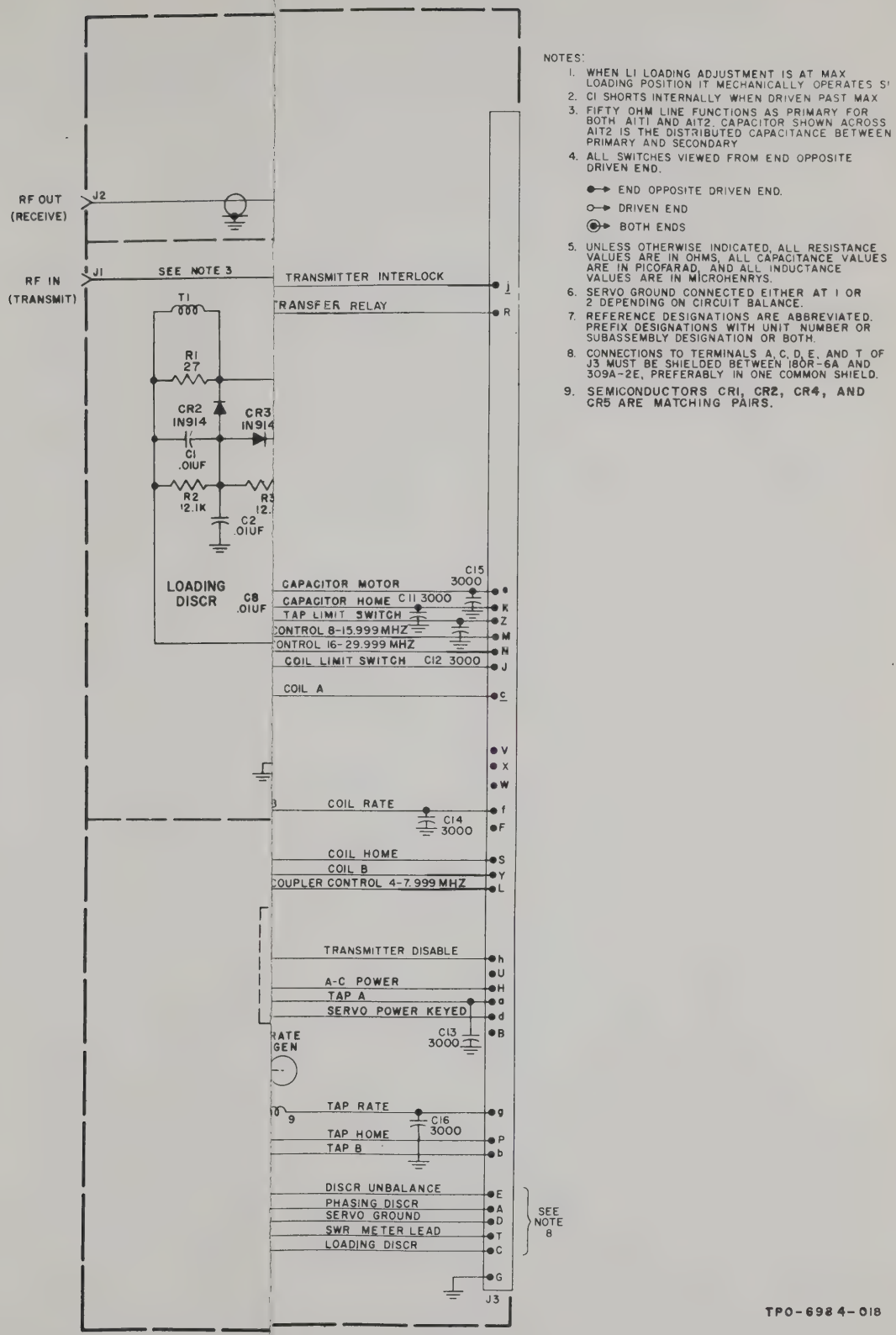
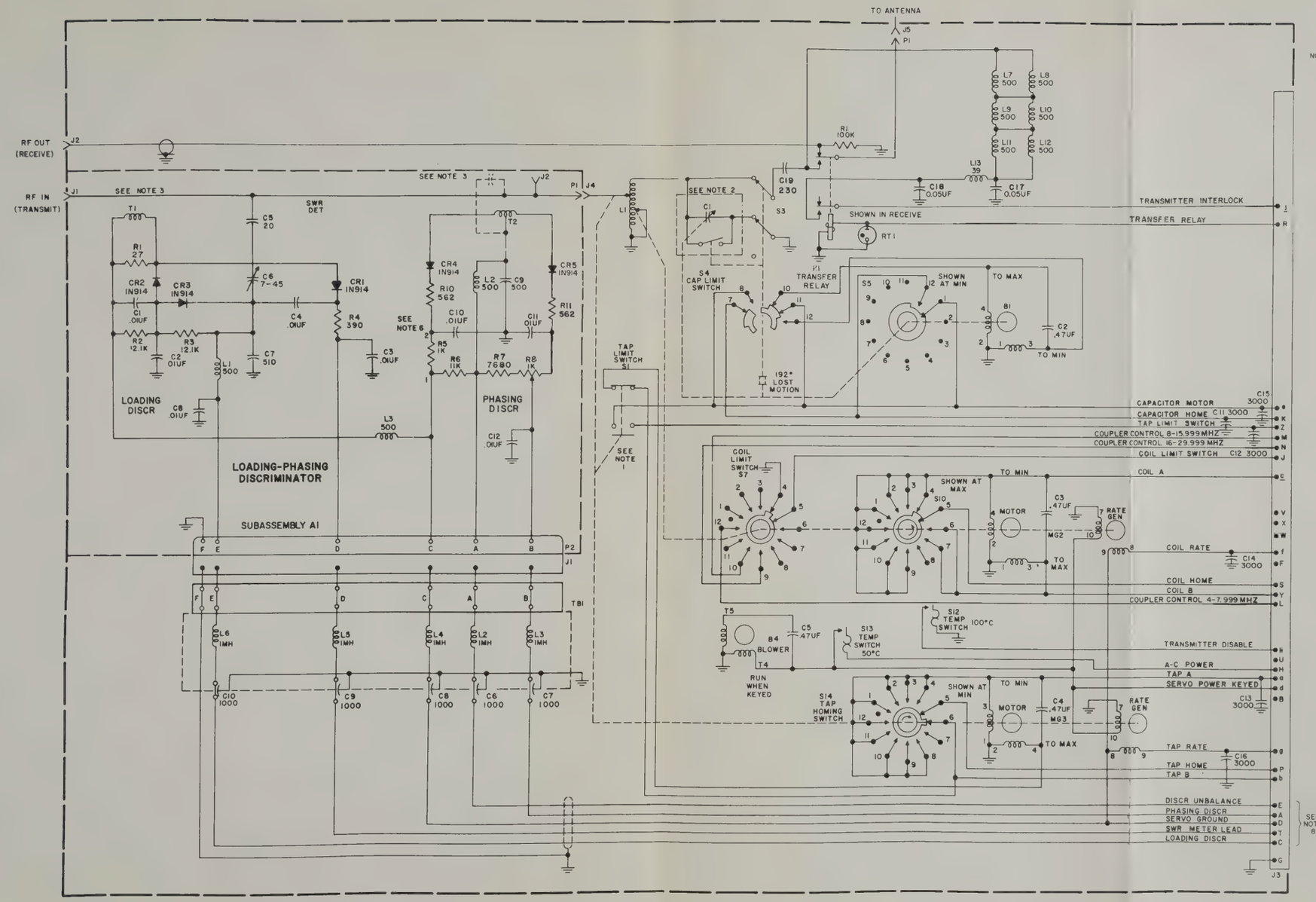


Figure 6-2. 180R-6A Antenna Coupler, Schematic Diagram.



NOTES

1. WHEN L1 LOADING ADJUSTMENT IS AT MAX. LOADING POSITION IT MECHANICALLY OPERATES S.
2. C1 SHORTS INTERNALLY WHEN DRIVEN PAST MAX.
3. FIFTY OHM LINE FUNCTIONS AS PRIMARY FOR BOTH A1T1 AND A1T2. CAPACITOR SHOWN ACROSS A1T2 IS THE DISTRIBUTED CAPACITANCE BETWEEN PRIMARY AND SECONDARY.
4. ALL SWITCHES VIEWED FROM END OPPOSITE DRIVEN END.
   - ●→ END OPPOSITE DRIVEN END
   - ○→ DRIVEN END
   - ◉→ BOTH ENDS
5. UNLESS OTHERWISE INDICATED, ALL RESISTANCE VALUES ARE IN OHMS, ALL CAPACITANCE VALUES ARE IN PICOFARAD, AND ALL INDUCTANCE VALUES ARE IN MICROHENRYS.
6. SERVO GROUND CONNECTED EITHER AT 1 OR 2 DEPENDING ON CIRCUIT BALANCE.
7. REFERENCE DESIGNATIONS ARE ABBREVIATED. PREFIX DESIGNATIONS WITH UNIT NUMBER OR SUBASSEMBLY DESIGNATION OR BOTH.
8. CONNECTIONS TO TERMINALS A, C, D, E, AND T OF J3 MUST BE SHIELDED BETWEEN 180R-6A AND 309A-2E, PREFERABLY IN ONE COMMON SHIELD.
9. SEMICONDUCTORS CR1, CR2, CR4, AND CR5 ARE MATCHING PAIRS.

TPO-6984-018

Figure 6-2. 180R-6A Antenna Coupler, Schematic Diagram.

SCHEMATIC CHANGES

REVISION IDENTIFICATION	DESCRIPTION OF REVISION AND REASON FOR CHANGE	SERVICE BULLETIN	MCN EFFECTIVITY

Figure 6-3. 309A-2E Antenna Coupler Control, Chassis Schematic Diagram (Sheet A).

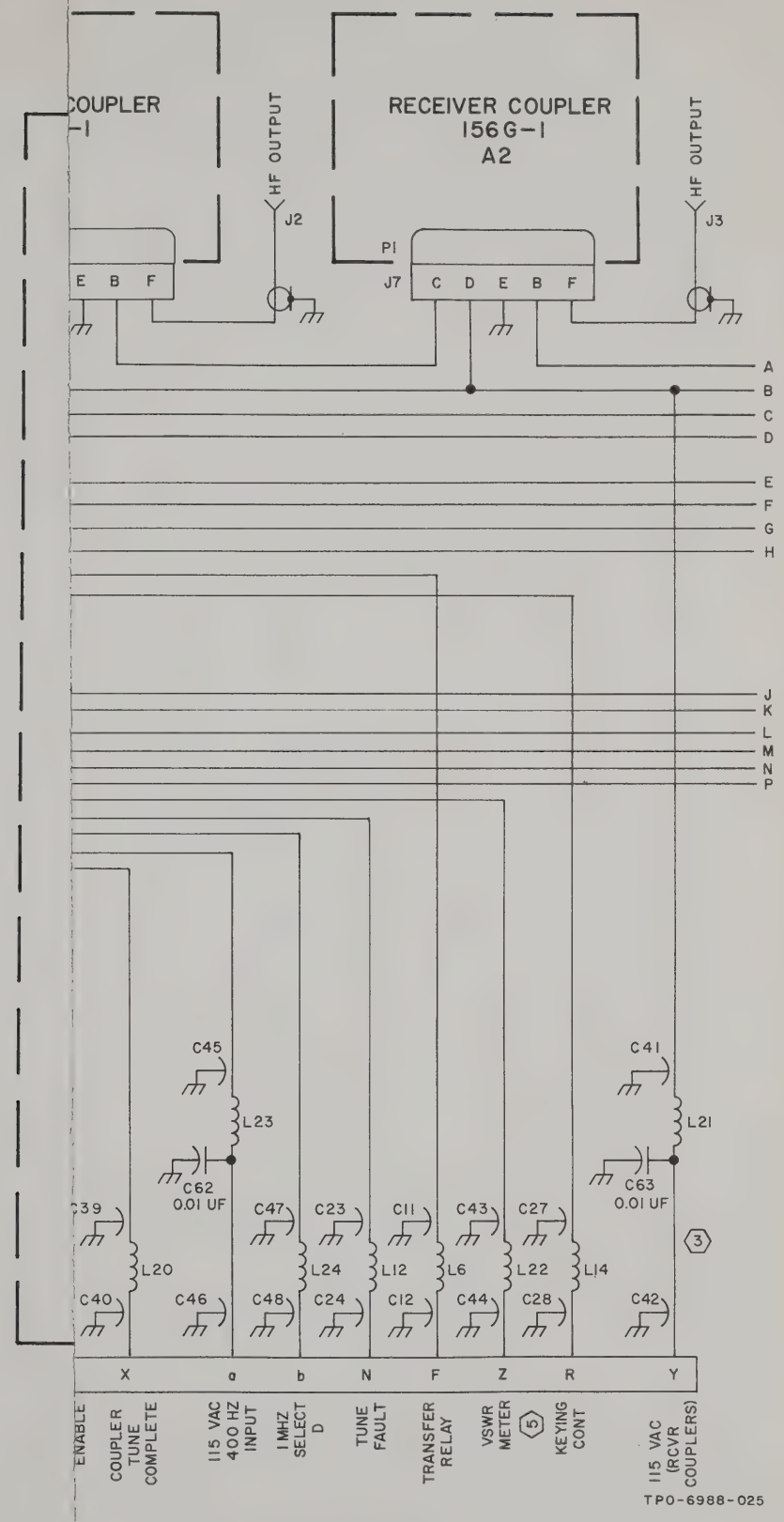


Figure 6-3. 309A-2E Antenna Coupler Control, Chassis Schematic Diagram (Sheet 1 of 2).

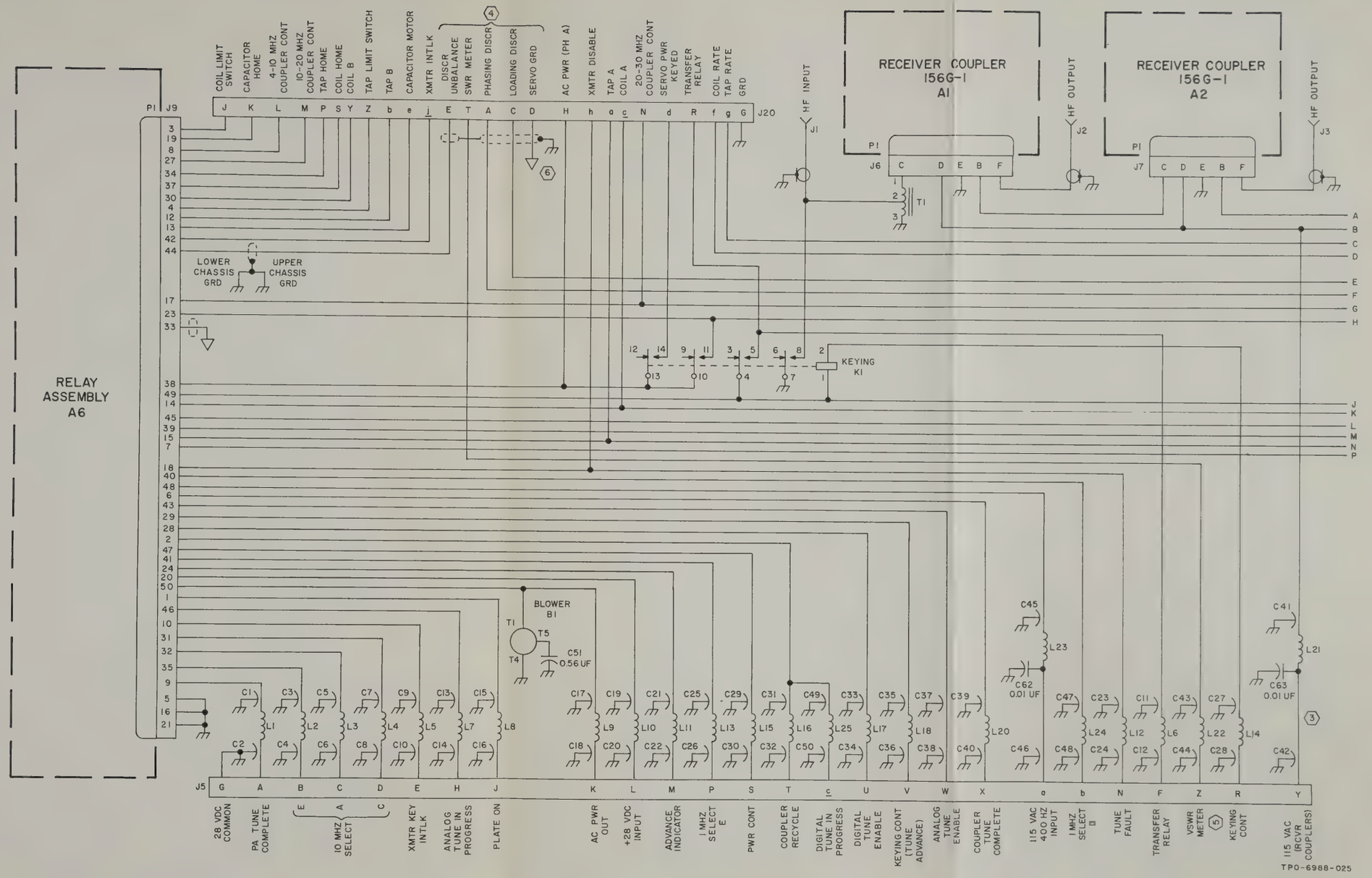


Figure 6-3. 309A-2E Antenna Coupler Control, Chassis Schematic Diagram (Sheet 1 of 2).

ED. PREFIX DESIGNATIONS WITH UNIT NUMBER OR

E VALUES ARE IN OHMS, CAPACITANCE VALUES ARE IN
IN MICROHENRYS.

E 2MH EXCEPT L6, L9, L10, L21, L22 AND L23 WHICH ARE

D T OF J20 MUST BE SHIELDED BETWEEN 309A-2E AND
HIELD.

BE SHIELDED BETWEEN 309A-2E AND FINAL TERMINATION.

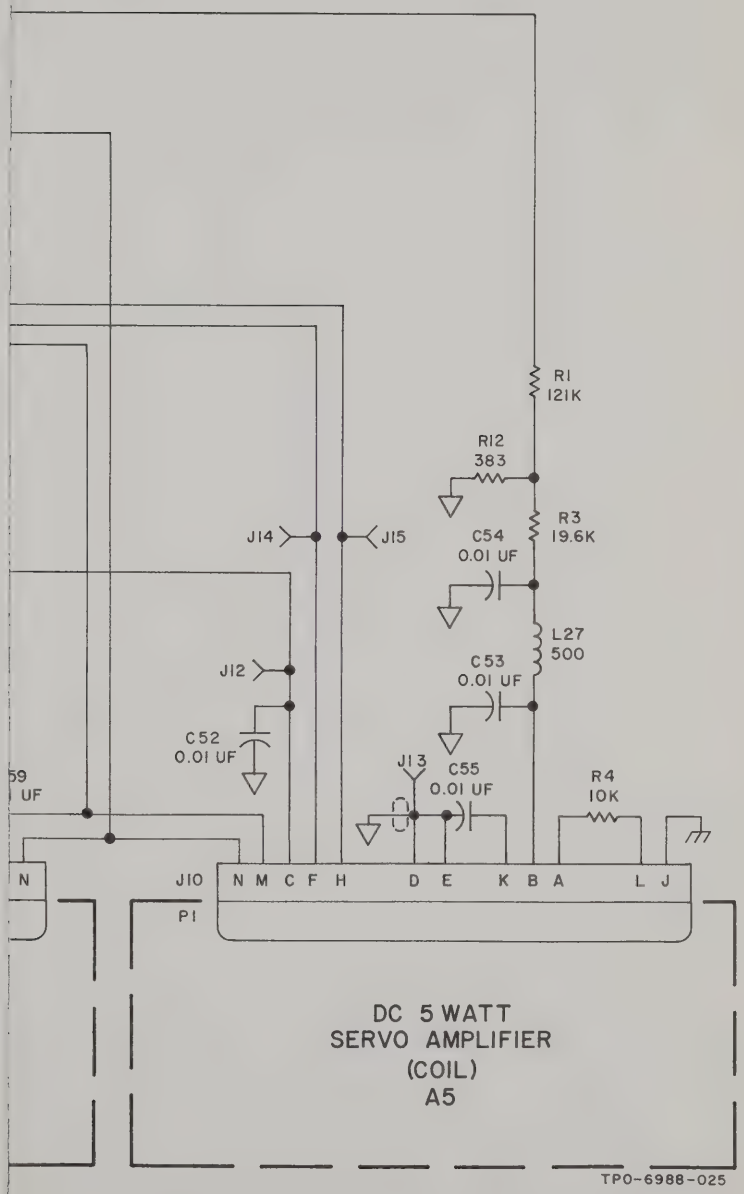


Figure 6-3. 309A-2E Antenna Coupler Control, Chassis Schematic Diagram (Sheet 2 of 2).

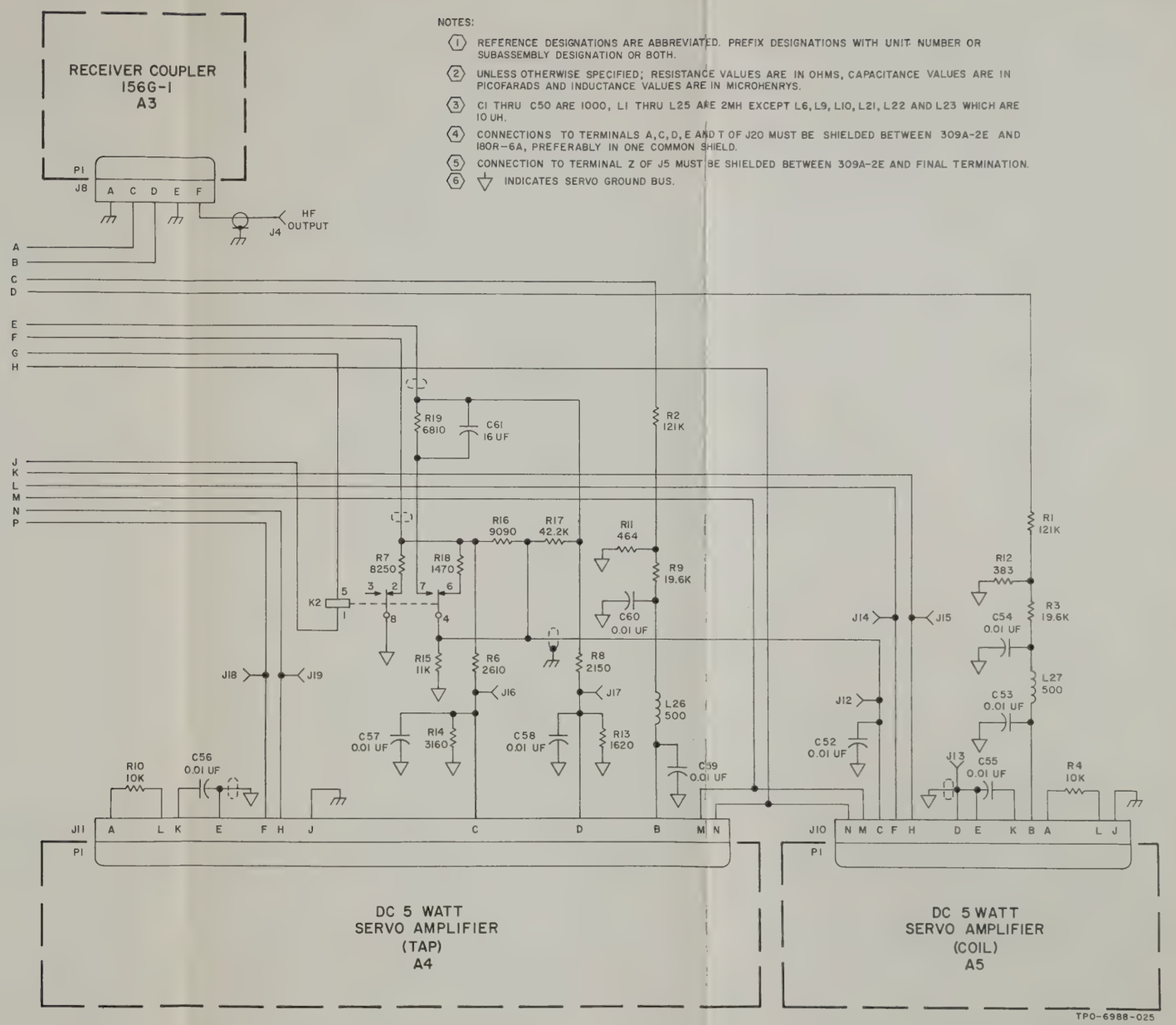


Figure 6-3. 309A-2E Antenna Coupler Control, Chassis Schematic Diagram (Sheet 2 of 2).

SCHEMATIC CHANGES

REVISION IDENTIFICATION	DESCRIPTION OF REVISION AND REASON FOR CHANGE	SERVICE BULLETIN	MCN EFFECTIVITY
	To ensure proper band limits for the antenna coupler. Move wire from K10-2 to K10. Move wire from K10-3 to K10-2. Interchange wires on K10-4 and K10-7.	(12) 309A-2E	0543
	CR3, CR4, CR5, CR7, CR9, CR10 were 1N1095.		845
	CR11 was 1N1095.		845

Figure 6-4. Relay Control Module, Schematic Diagram (Sheet A).

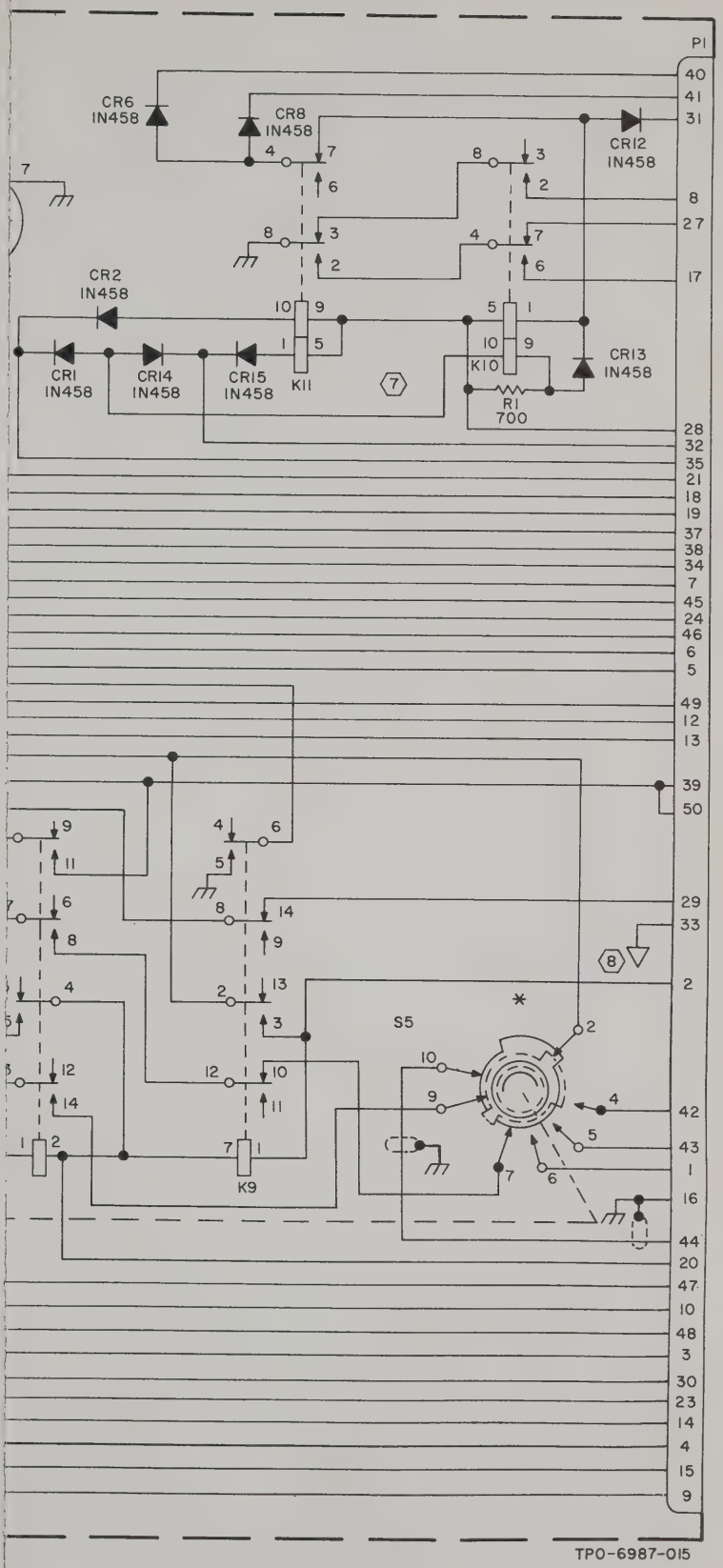


Figure 6-4. Relay Control Module, Schematic Diagram.

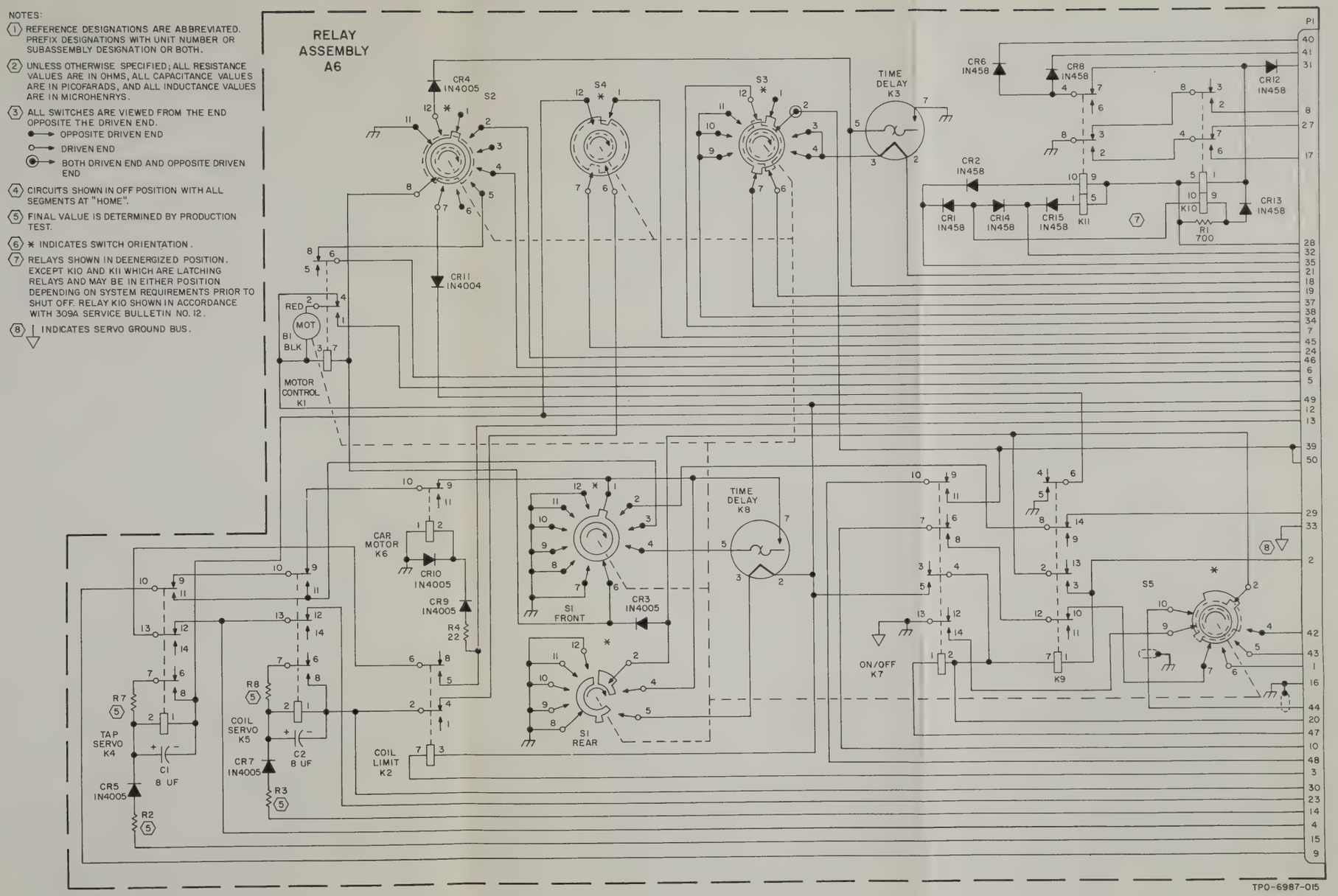


Figure 6-4. Relay Control Module, Schematic Diagram.

SCHEMATIC CHANGES

REVISION IDENTIFICATION	DESCRIPTION OF REVISION AND REASON FOR CHANGE	SERVICE BULLETIN	MCN EFFECTIVITY
	These changes were made to improve vswr.		
	Add C17.		876
	Added new servo amplifier to improve moisture resistance.		893
	R7 was 47K.	(17) 309A-2E	2730
	R26 was 33K.	(17) 309A-2E	2730
	Remove C6 and replace with CR11.	(17) 309A-2E	2730
	Add CR9 and CR10.	(17) 309A-2E	2730
	Add C18.		3377
	C4 was 2.5 uf.		3377
	C14 from R15 to ground was C14 from R15 to R16.		

Figure 6-5. 5-Watt DC Servo Amplifier, Schematic Diagram, Collins Part Number 528-0531-001 (Sheet A).

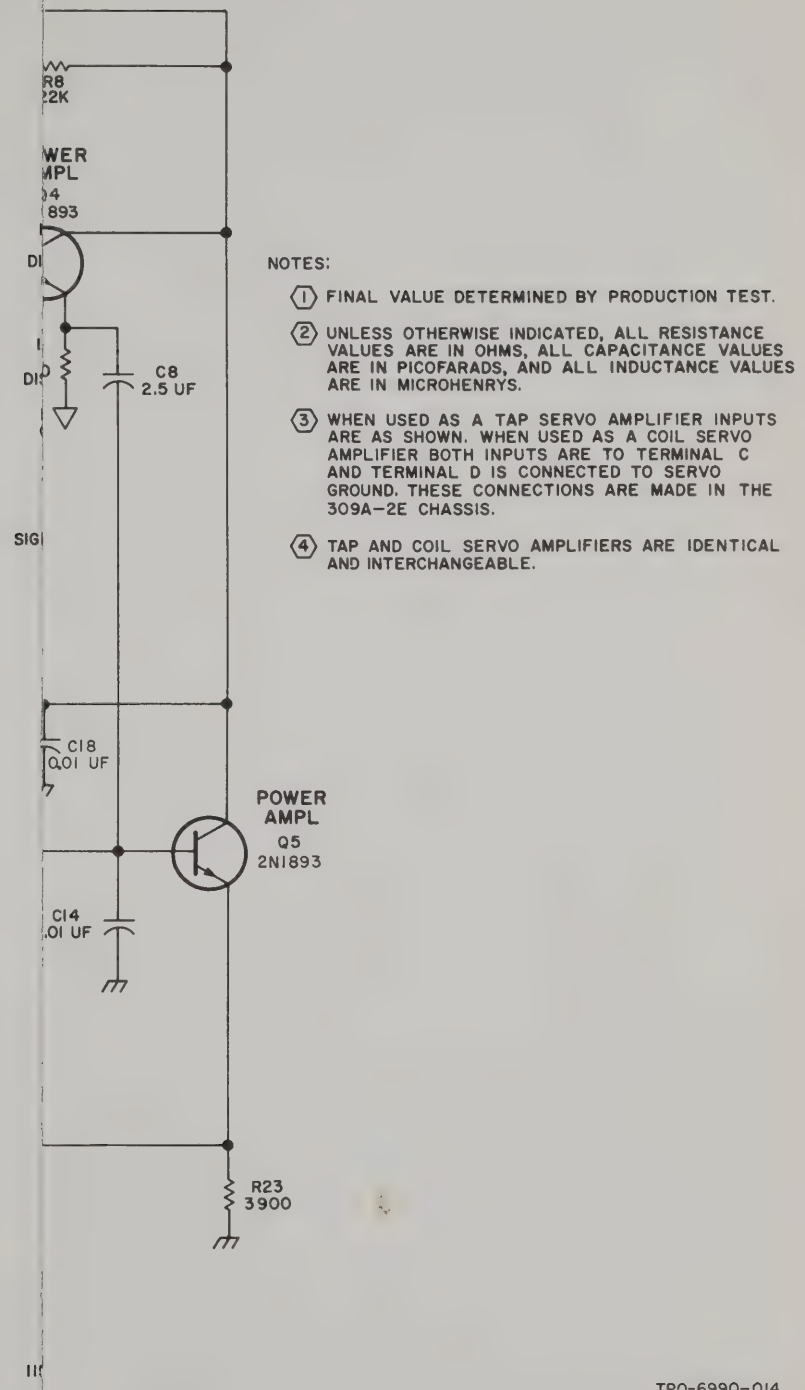
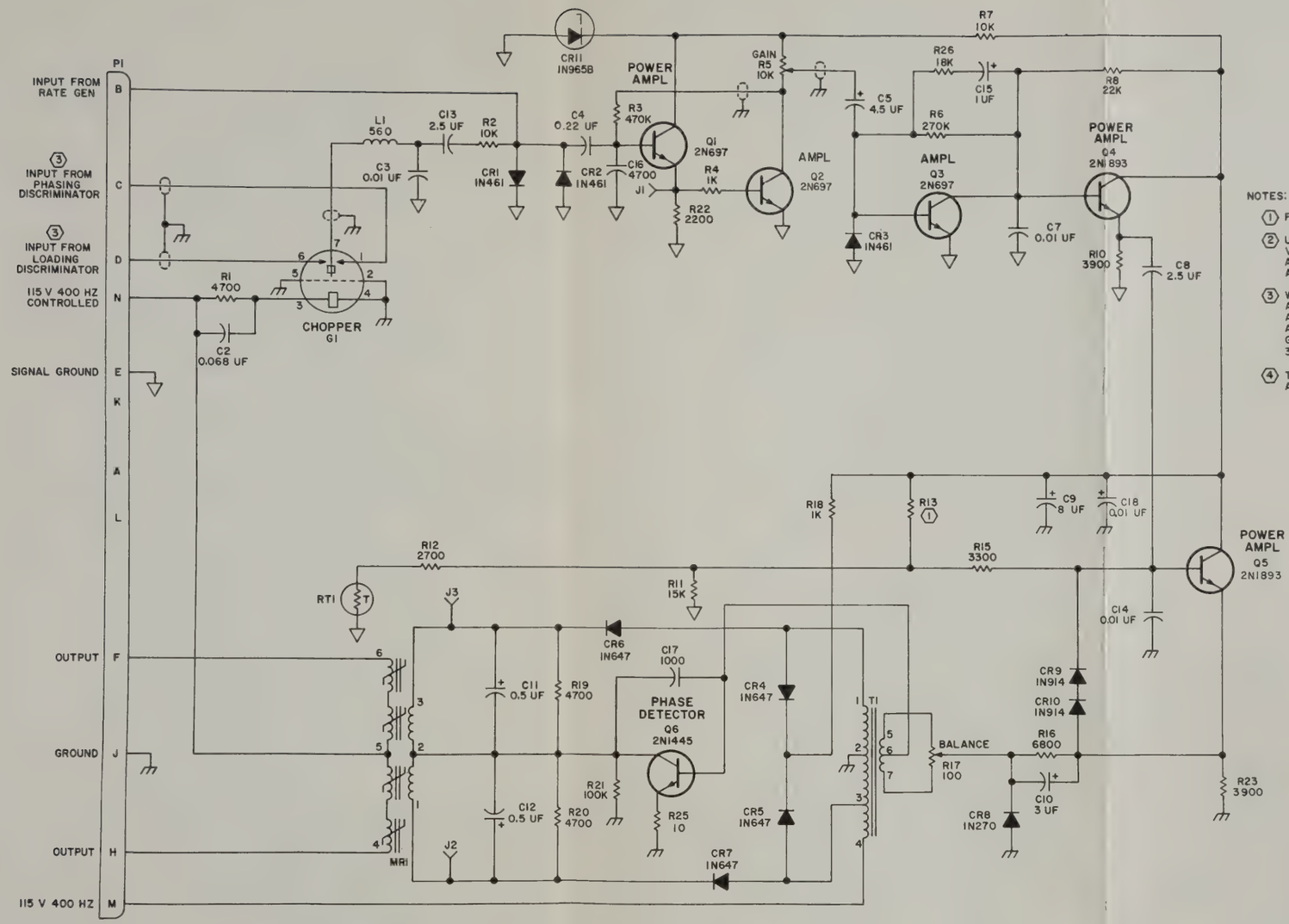


Figure 6-5. 5-Watt DC Servo Amplifier, Schematic Diagram, Collins Part Number 528-0531-001.



NOTES:

① FINAL VALUE DETERMINED BY PRODUCTION TEST.

② UNLESS OTHERWISE INDICATED, ALL RESISTANCE VALUES ARE IN OHMS, ALL CAPACITANCE VALUES ARE IN PICOFARADS, AND ALL INDUCTANCE VALUES ARE IN MICROHENRYS.

③ WHEN USED AS A TAP SERVO AMPLIFIER INPUTS ARE AS SHOWN. WHEN USED AS A COIL SERVO AMPLIFIER BOTH INPUTS ARE TO TERMINAL C AND TERMINAL D IS CONNECTED TO SERVO GROUND. THESE CONNECTIONS ARE MADE IN THE 309A-2E CHASSIS.

④ TAP AND COIL SERVO AMPLIFIERS ARE IDENTICAL AND INTERCHANGEABLE.

TPO-6990-014

Figure 6-5. 5-Watt DC Servo Amplifier, Schematic Diagram, Collins Part Number 528-0531-001.

SCHEMATIC CHANGES

REVISION IDENTIFICATION	DESCRIPTION OF REVISION AND REASON FOR CHANGE	SERVICE BULLETIN	MCN EFFECTIVITY
	Add C16.		4717 and above
	Add CR9 and CR10.		4717 and above

Figure 6-6. 5-Watt DC Servo Amplifier, Schematic Diagram, Collins Part Number 528-0023-005 (Sheet A).

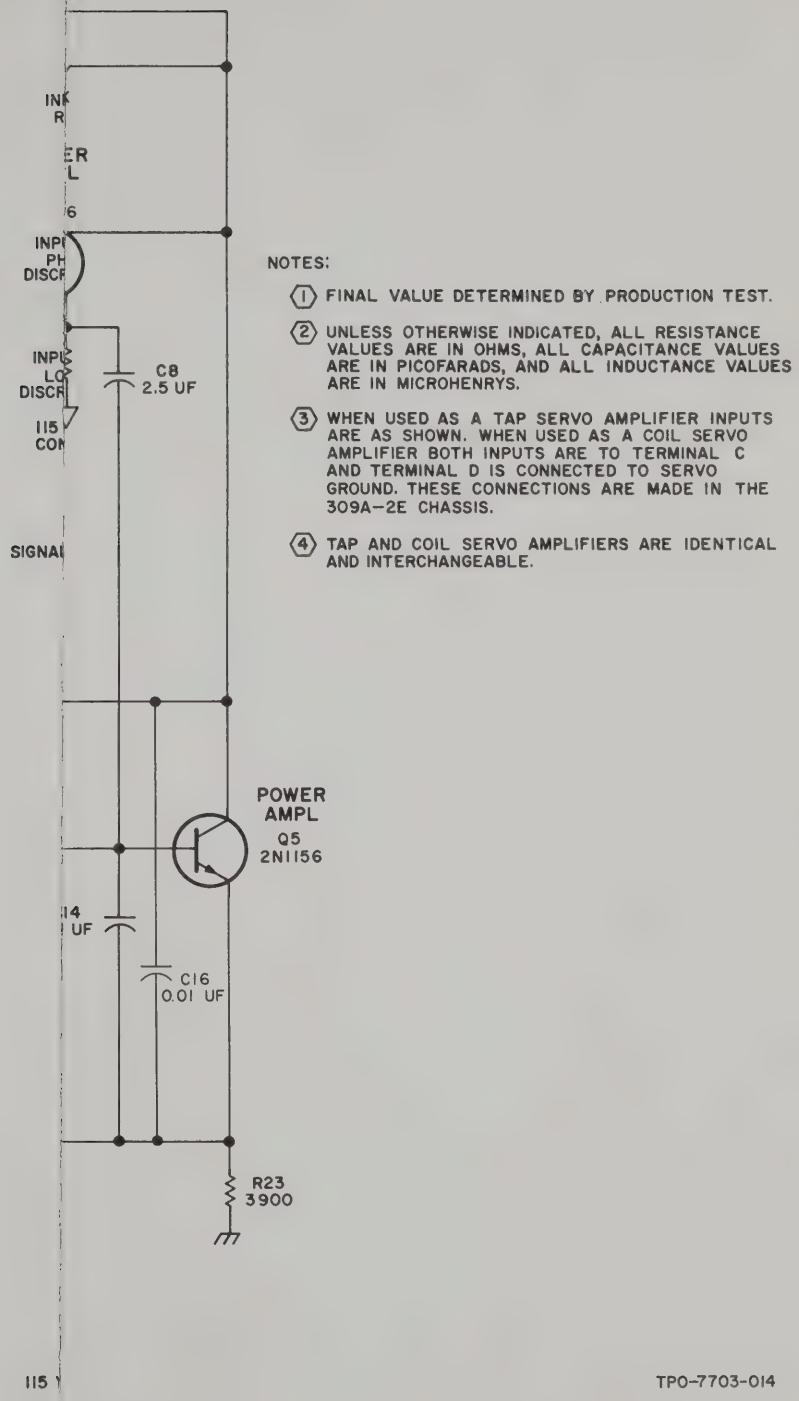
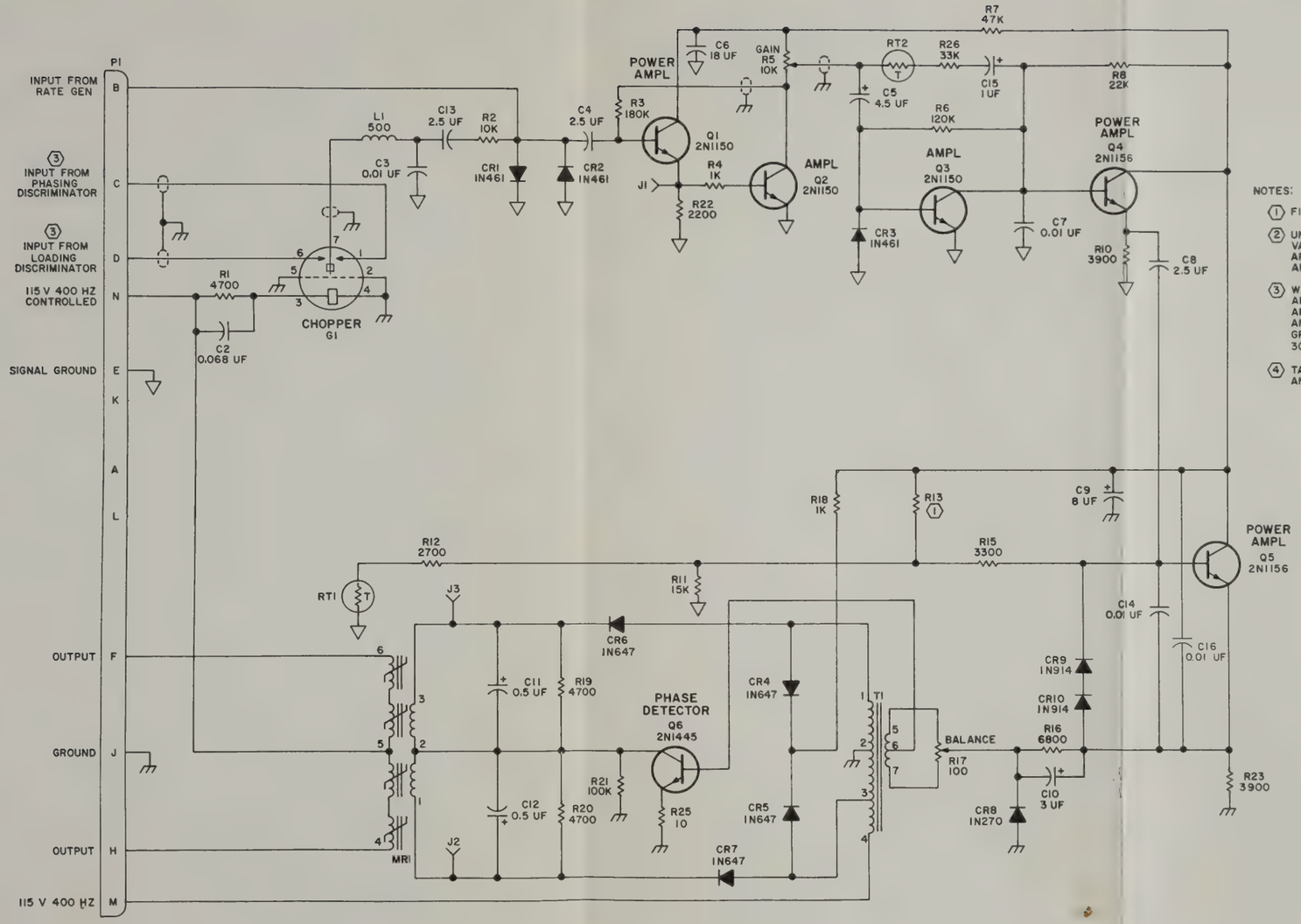


Figure 6-6. 5-Watt DC Servo Amplifier, Schematic Diagram, Collins Part Number 528-0023-005.



NOTES:

① FINAL VALUE DETERMINED BY PRODUCTION TEST.

② UNLESS OTHERWISE INDICATED, ALL RESISTANCE VALUES ARE IN OHMS, ALL CAPACITANCE VALUES ARE IN PICOFARADS, AND ALL INDUCTANCE VALUES ARE IN MICROHENRYS.

③ WHEN USED AS A TAP SERVO AMPLIFIER INPUTS ARE AS SHOWN. WHEN USED AS A COIL SERVO AMPLIFIER BOTH INPUTS ARE TO TERMINAL C AND TERMINAL D IS CONNECTED TO SERVO GROUND. THESE CONNECTIONS ARE MADE IN THE 309A-2E CHASSIS.

④ TAP AND COIL SERVO AMPLIFIERS ARE IDENTICAL AND INTERCHANGEABLE.

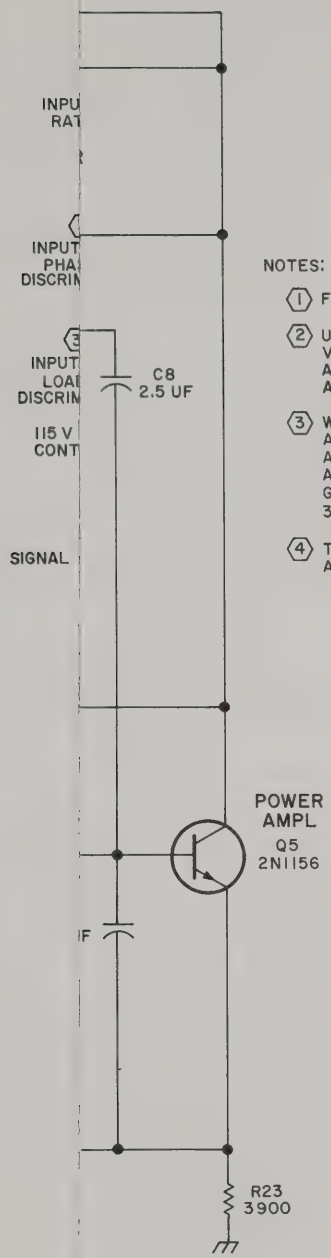
TPO-7703-014

Figure 6-6. 5-Watt DC Servo Amplifier, Schematic Diagram, Collins Part Number 528-0023-005.

SCHEMATIC CHANGES

REVISION IDENTIFICATION	DESCRIPTION OF REVISION AND REASON FOR CHANGE	SERVICE BULLETIN	MCN EFFECTIVITY
	To standardize type numbers these changes were made. Q1, Q2, Q3 were type T1904. Q4 and Q5 were type T1953. Q6 was type J435.		465 and above
	Remove R24 and replace with CR8. Improved linearity.		465 and above
	R25 was 33. Increase gain at lower temperatures and improve linearity.		465 and above
	Add RT2, R26, and C15. Improve linearity and increase gain at lower temperatures.		465 and above
	R8 was 47K. Reduce gain and lower input impedance.		256, 273, 274, 314, 316, 322, 327, 328, 331, 333, 334, 335, 338, 339, 340, 342, 343, 344, 345, 349, 350, 351, 354, 355, 362, 363, 365, 367, 369, 370 thru 377, 379, 381 and above

Figure 6-7. 5-Watt DC Servo Amplifier, Schematic Diagram, Collins Part Number 543-3461-004 (Sheet A).

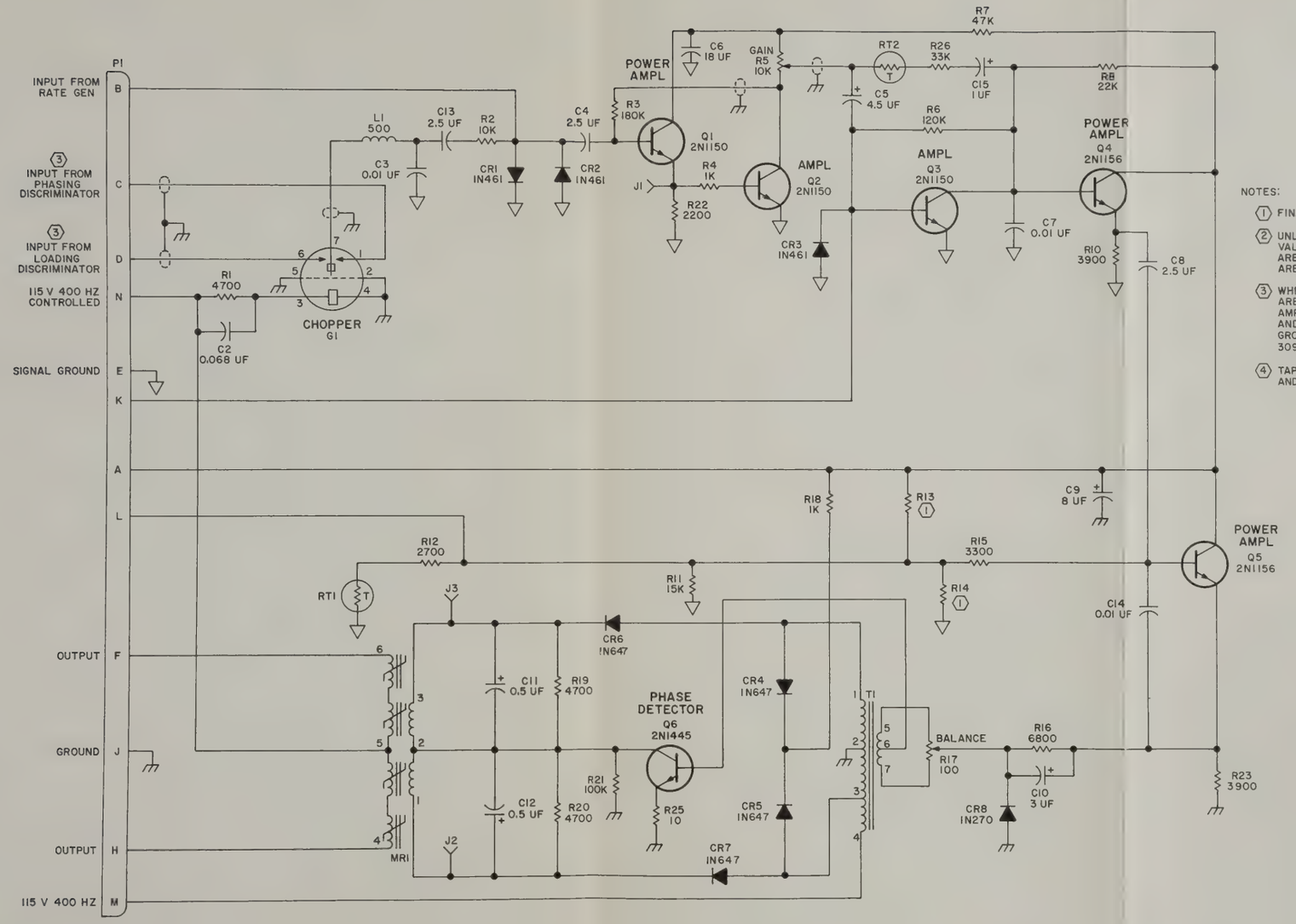


NOTES:

1. FINAL VALUE DETERMINED BY PRODUCTION TEST.
2. UNLESS OTHERWISE INDICATED, ALL RESISTANCE VALUES ARE IN OHMS, ALL CAPACITANCE VALUES ARE IN PICOFARADS, AND ALL INDUCTANCE VALUES ARE IN MICROHENRYS.
3. WHEN USED AS A TAP SERVO AMPLIFIER INPUTS ARE AS SHOWN. WHEN USED AS A COIL SERVO AMPLIFIER BOTH INPUTS ARE TO TERMINAL C AND TERMINAL D IS CONNECTED TO SERVO GROUND. THESE CONNECTIONS ARE MADE IN THE 309A-2E CHASSIS.
4. TAP AND COIL SERVO AMPLIFIERS ARE IDENTICAL AND INTERCHANGEABLE.

TPO-7704-014

Figure 6-7. 5-Watt DC Servo Amplifier, Schematic Diagram, Collins Part Number 543-3461-004.



NOTES:

① FINAL VALUE DETERMINED BY PRODUCTION TEST.

② UNLESS OTHERWISE INDICATED, ALL RESISTANCE VALUES ARE IN OHMS, ALL CAPACITANCE VALUES ARE IN PICOFARADS, AND ALL INDUCTANCE VALUES ARE IN MICROHENRYS.

③ WHEN USED AS A TAP SERVO AMPLIFIER INPUTS ARE AS SHOWN. WHEN USED AS A COIL SERVO AMPLIFIER BOTH INPUTS ARE TO TERMINAL C AND TERMINAL D IS CONNECTED TO SERVO GROUND. THESE CONNECTIONS ARE MADE IN THE 309A-2E CHASSIS.

④ TAP AND COIL SERVO AMPLIFIERS ARE IDENTICAL AND INTERCHANGEABLE.

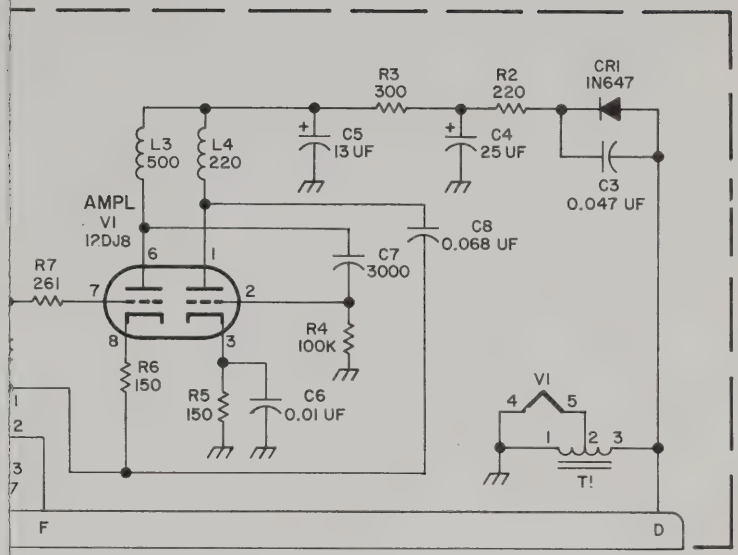
TP0-7704-014

Figure 6-7. 5-Watt DC Servo Amplifier, Schematic Diagram, Collins Part Number 543-3461-004.

SCHEMATIC CHANGES

REVISION IDENTIFICATION	DESCRIPTION OF REVISION AND REASON FOR CHANGE	SERVICE BULLETIN	MCN EFFECTIVITY
	To improve service life of tube; V1 changed to 12DJ8. This required these circuit changes. R2 was 40. R5 was 56. R6 was 56. V1- pin 8 was pin 6 and pin 6 was pin 9. Remove C9.	(13) 309A-2E	3165
	V1 replaced by a 6DJ8 and T1 by a 6.3-volt filament transformer, to eliminate obsolete 12DJ8. Note To substitute a 6DJ8 for the obsolete 12DJ8, T1 must be replaced by a 6.3-volt filament transformer or an 18-ohm filament dropping resistor must be installed between T1-2 of the 12-volt transformer and pin 5 of the tube.	(16) 309A-2E	4662
	To eliminate a 300-kHz oscillation that may occur using a 12DJ8 or a 6DJ8, this modification may be made at the option of the customer. Replace L3 and L4 with 2.7K, 1-watt, 10% resistors. Replace C6 with a 0.15-uf, 35-vdc capacitor. Install a 0.15-uf, 35-vdc capacitor where C9 was originally located, prior to modification SB13. This change will not be incorporated in production units.	(15) 309A-2E	

Figure 6-8. 156G-1 Receiver Coupler, Schematic Diagram (Sheet A).



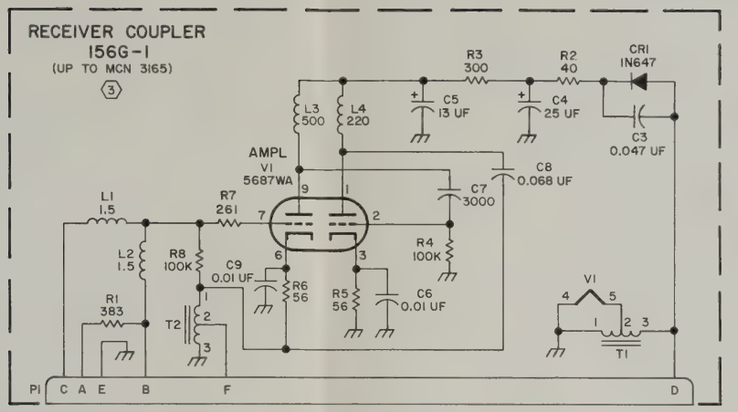
TIONS ARE ABBREVIATED. PREFIX DESIGNATIONS WITH UNIT NUMBER OR
IGNATION OR BOTH.

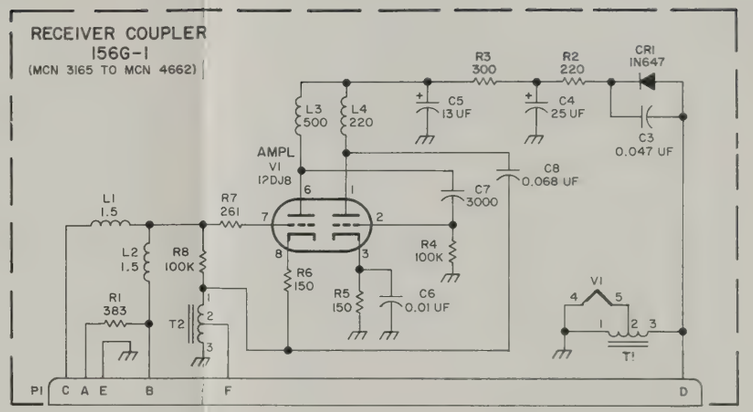
SPECIFIED, RESISTANCE VALUES ARE IN OHMS, CAPACITANCE VALUES ARE IN
DUCTANCE VALUES ARE IN MICROHENRYS.

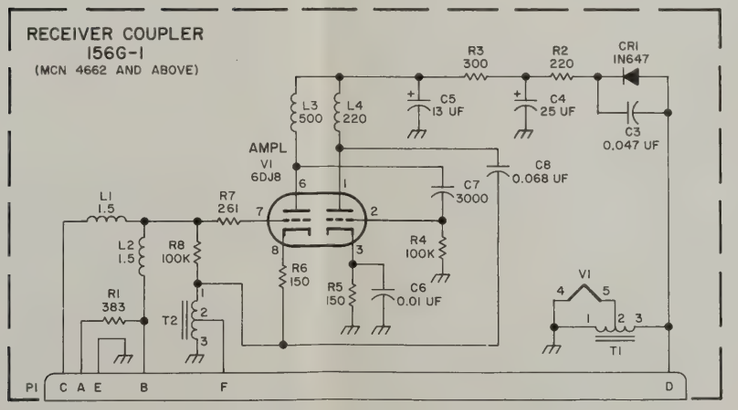
HREE CIRCUITS FOR RECEIVER COUPLER 156G-1. THE 156G-1 COUPLER, USING THE
ORRECT UP TO MCN 3165. MCN 3165 TO MCN 4662 USES CIRCUIT CONTAINING
SERVICE BULLETIN NO. 13 DESCRIBES PROCEDURE AND PARTS REQUIREMENTS TO
56G-1, USING 12DJ8. MCN 4662 AND ABOVE USES CIRCUIT CONTAINING 6DJ8
ICE BULLETIN NO. 16 DESCRIBES PROCEDURE AND PARTS REQUIRED TO CONVERT
8 TUBE.

TPO-6989-015

Figure 6-8. 156G-1 Receiver Coupler, Schematic Diagram.







NOTES:

1. REFERENCE DESIGNATIONS ARE ABBREVIATED. PREFIX DESIGNATIONS WITH UNIT NUMBER OR SUBASSEMBLY DESIGNATION OR BOTH.
2. UNLESS OTHERWISE SPECIFIED, RESISTANCE VALUES ARE IN OHMS, CAPACITANCE VALUES ARE IN PICOFARADS, AND INDUCTANCE VALUES ARE IN MICROHENRYS.
3. SCHEMATIC SHOWS THREE CIRCUITS FOR RECEIVER COUPLER 156G-1. THE 156G-1 COUPLER, USING THE 5687WA TUBE, IS CORRECT UP TO MCN 3165. MCN 3165 TO MCN 4662 USES CIRCUIT CONTAINING 12DJ8 TUBE. 309-A SERVICE BULLETIN NO. 13 DESCRIBES PROCEDURE AND PARTS REQUIREMENTS TO CONVERT TO THE 156G-1, USING 12DJ8. MCN 4662 AND ABOVE USES CIRCUIT CONTAINING 6DJ8 TUBE. 309-A SERVICE BULLETIN NO. 16 DESCRIBES PROCEDURE AND PARTS REQUIRED TO CONVERT FROM 12DJ8 TO 6DJ8 TUBE.

TPO-6989-015

Figure 6-8. 156G-1 Receiver Coupler, Schematic Diagram.

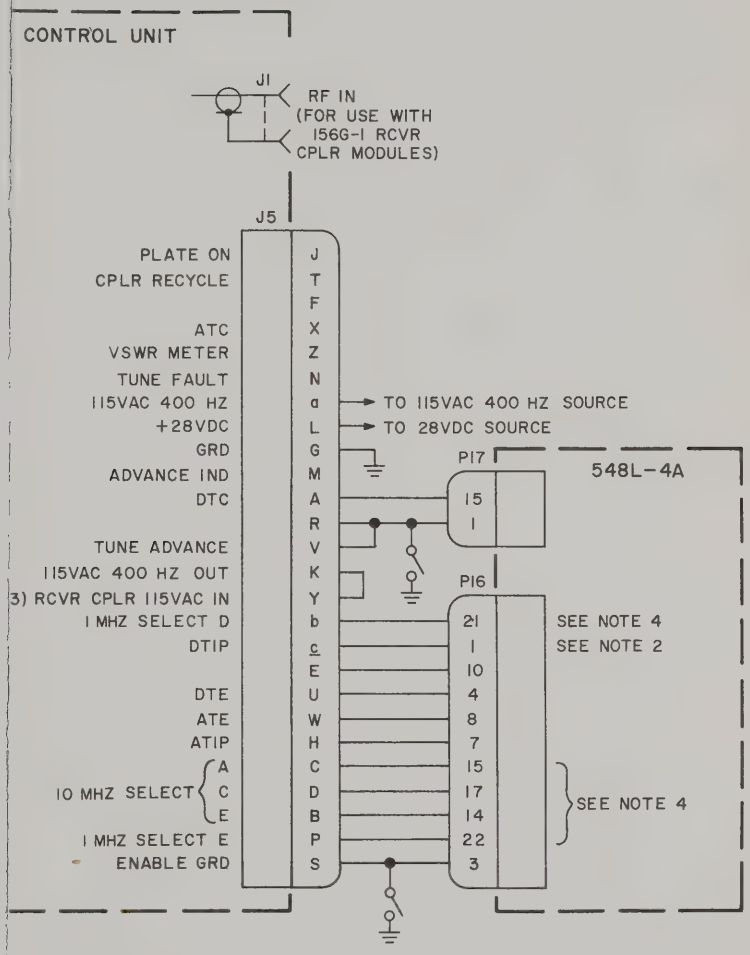
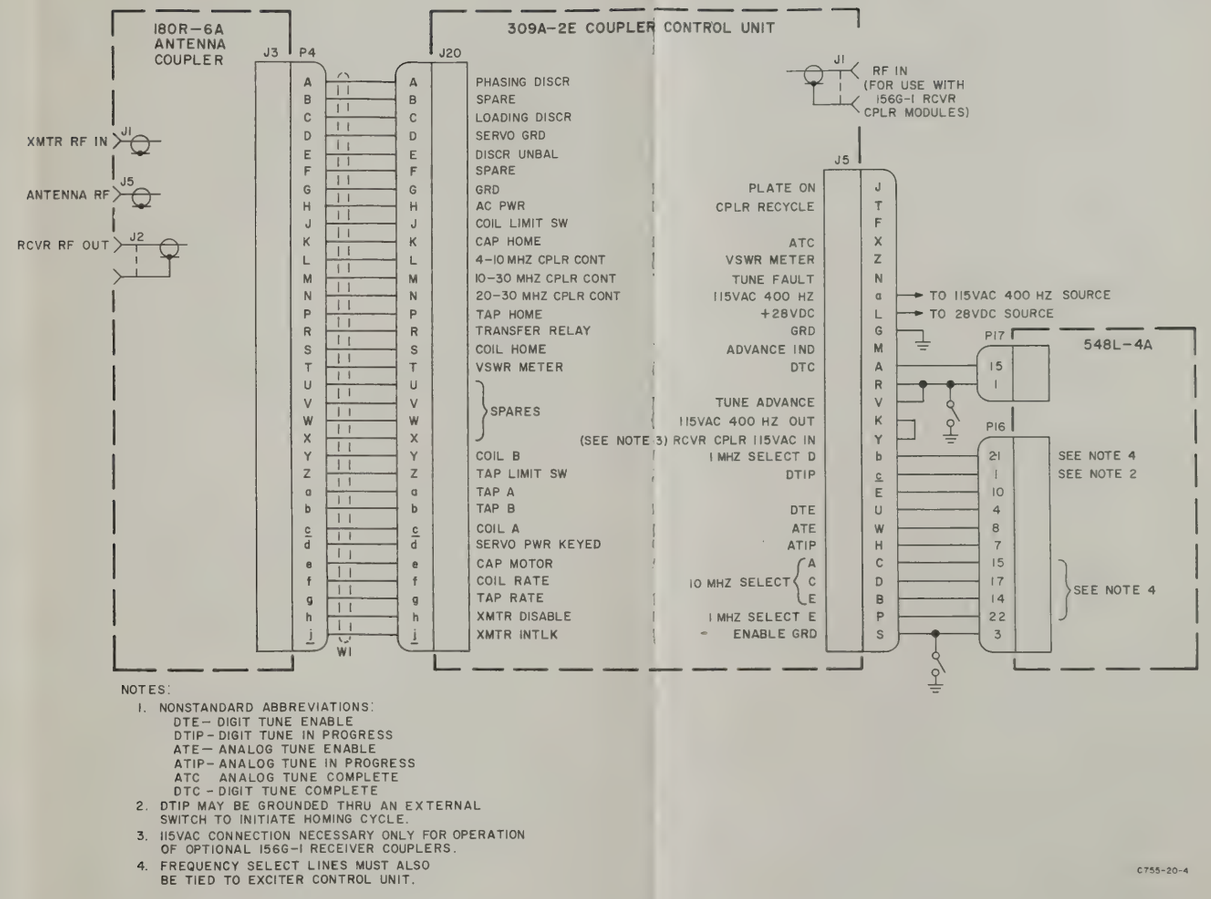


Figure 6-9. Interconnection Diagram, 180R-6/6A, 309A-2E, 548L-4A.



NOTES:

1. NONSTANDARD ABBREVIATIONS:
   DTE – DIGIT TUNE ENABLE
   DTIP – DIGIT TUNE IN PROGRESS
   ATE – ANALOG TUNE ENABLE
   ATIP – ANALOG TUNE IN PROGRESS
   ATC ANALOG TUNE COMPLETE
   DTC – DIGIT TUNE COMPLETE
2. DTIP MAY BE GROUNDED THRU AN EXTERNAL SWITCH TO INITIATE HOMING CYCLE.
3. 115VAC CONNECTION NECESSARY ONLY FOR OPERATION OF OPTIONAL 156G-1 RECEIVER COUPLERS.
4. FREQUENCY SELECT LINES MUST ALSO BE TIED TO EXCITER CONTROL UNIT.

Figure 6-9. Interconnection Diagram, 180R-6/6A, 309A-2E, 548L-4A.

CUSTOMERS' COMMENTS ON MANUAL

Collins Radio Company has endeavored to furnish you with an accurate, useful, up-to-date manual. This manual can be improved with your help. Please use the attached return cards to report any errors, discrepancies, and omissions in this manual as well as any general comments on adequacy of the manual you wish to make.

COLLINS

MANUAL TITLE ______

MANUAL PART NO. ______ MANUAL DATE ______

YOUR NAME AND/OR COMPANY ______

ADDRESS ______ DATE ______

PAGE	PARAGRAPHS	DISCREPANCIES, ERRORS, COMMENTS

I CONSIDER THIS MANUAL (WILL SERVE; HAS SERVED) ITS PURPOSE

☐ WELL; ☐ ADEQUATELY; ☐ POORLY.

MANUAL TITLE ______

MANUAL PART NO. ______ MANUAL DATE ______

YOUR NAME AND/OR COMPANY ______

ADDRESS ______ DATE ______

PAGE	PARAGRAPHS	DISCREPANCIES, ERRORS, COMMENTS

I CONSIDER THIS MANUAL (WILL SERVE; HAS SERVED) ITS PURPOSE

☐ WELL; ☐ ADEQUATELY; ☐ POORLY.

MANUAL TITLE ______

MANUAL PART NO. ______ MANUAL DATE ______

YOUR NAME AND/OR COMPANY ______

ADDRESS ______ DATE ______

PAGE	PARAGRAPHS	DISCREPANCIES, ERRORS, COMMENTS

I CONSIDER THIS MANUAL (WILL SERVE; HAS SERVED) ITS PURPOSE

☐ WELL; ☐ ADEQUATELY; ☐ POORLY.

FIRST CLASS
PERMIT NO. 236
Cedar Rapids, Iowa

BUSINESS REPLY MAIL
No Postage Stamp Necessary If Mailed in The United States

POSTAGE WILL BE PAID BY

Collins Radio Company
TECHNICAL PUBLICATIONS DEPT.
321 Third Street S. E.
Cedar Rapids, Iowa 52406

FIRST CLASS
PERMIT NO. 236
Cedar Rapids, Iowa

BUSINESS REPLY MAIL
No Postage Stamp Necessary If Mailed in The United States

POSTAGE WILL BE PAID BY

Collins Radio Company
TECHNICAL PUBLICATIONS DEPT.
321 Third Street S. E.
Cedar Rapids, Iowa 52406.

FIRST CLASS
PERMIT NO. 236
Cedar Rapids, Iowa

BUSINESS REPLY MAIL
No Postage Stamp Necessary If Mailed in The United States

POSTAGE WILL BE PAID BY

Collins Radio Company
TECHNICAL PUBLICATIONS DEPT.
321 Third Street S. E.
Cedar Rapids, Iowa 52406

ARC-58


COLLINS